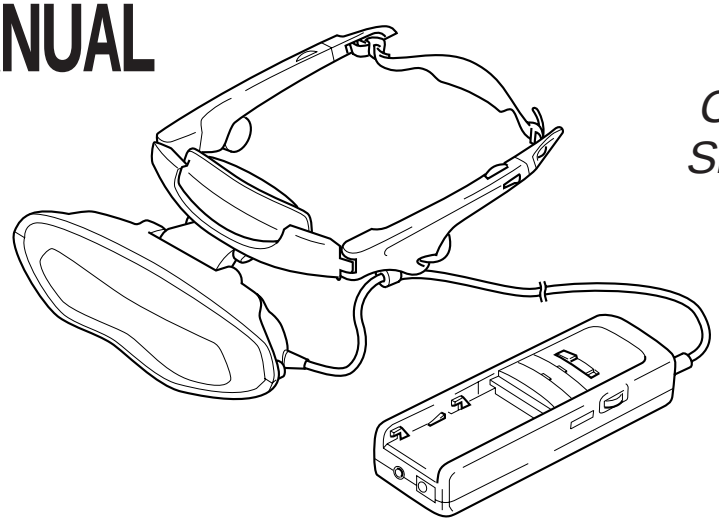
PLM-A55

SERVICE MANUAL



US Model
Canadian Model
Singapore Model

SPECIFICATIONS

Power supply
  AC power adapter: AC-PLM2
    100-240 V AC, 50/60 Hz, 16 W
    Output voltage 9 V, 1.3 A
  Battery pack: NP-F550/NP-F750/NP-F950 (not supplied)
Power consumption
  3.8 W (max.)
Operating temperature
  5°C to 35°C (41°F to 95°F)
Storage temperature
  –10°C to 60°C (14°F to 140°F)
Dimensions
  Display unit:
    Approx. 165 × 56 × 110 mm
    (Approx. 6 1/2 × 2 1/4 × 4 3/8 inches)
    (w/h/d)
  Power supply box:
    Approx. 53 × 30 × 149 mm
    (Approx. 2 1/8 × 1 3/16 × 5 7/8 inches)
    (w/h/d)
    not including projecting parts and controls
Mass
  Display unit: Approx. 150 g (5.3 oz)
  Power supply box: Approx. 110 g (3.9 oz)
Video signal
  NTSC color, EIA standards

Audio/video input
  Special minijack
  1 Vp-p, 75 ohms, unbalanced, sync negative
Audio output
  Stereo minijack
Supplied accessories
  AC power adapter AC-PLM2 (1)
  Audio/video cable (special miniplug ⟷ phono plug) (3 m) (1)
  Audio/video cable (special miniplug ⟷ special miniplug) (0.5 m) (1)
  Sunshades (1 pair)
  Carrying cases (2)
  AC power cord (1)
  Warning label (1)

Design and specifications are subject to change without notice.

GLASSTRON

SONY®

9-928-101-11

TABLE OF CONTENTS

1. GENERAL

Glasstron is a brand-new concept in visual display 3
About the Glasstron 3
Checking the supplied accessories 4
Locating the parts and controls 4
Connecting the Glasstron 5
Wearing the Glasstron 6
Turning on the Glasstron 7
Setting the password 9
Using the Glasstron 10
Viewing the surrounding environment (See-through) 12
Adjusting the sound and picture 12
Using with power sources other than the AC adapter 14

2. DISASSEMBLY 15

3. ELECTRICAL ADJUSTMENTS 17
Power Supply Block 18
Video Block 26
LCD Block 27

4. DIAGRAMS

4-1. IC Pin Function Description 34
4-2. Block Diagram – MAIN Section – 41
4-3. Block Diagram – AUDIO/KEY CONTROL Section – ... 43
4-4. Block Diagram – DISPLAY Section – 45
4-5. Block Diagram – POWER SUPPLY Section – 47
4-6. Printed Wiring Boards – YM-11 Board/SW-312 Board – 50
4-7. Schematic Diagram – YM-11 Board (1/3) – 53
4-8. Schematic Diagram – YM-11 Board (2/3)/SW-312 Board – 57
4-9. Schematic Diagram – YM-11 Board (3/3) – 61
4-10. Schematic Diagram – SA-52 Board – 66
4-11. Printed Wiring Board – SA-52 Board – 69
4-12. Printed Wiring Board – RG-46 Board – 71
4-13. Schematic Diagram – RG-46 Board – 73

5. EXPLODED VIEWS 85

6. ELECTRICAL PARTS LIST 88

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

Glasstron is a brand-new concept in visual display

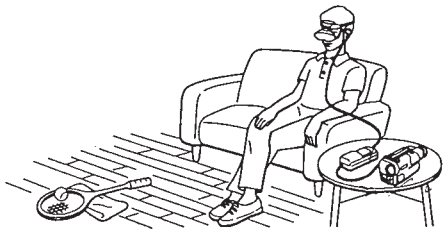
Congratulations on your purchase of a Sony Glasstron Personal Viewer. The Glasstron, using current technology in small, lightweight visual displays, provides a television viewing experience similar to watching a 52-inch television from a distance of approximately 2 m (6.6 feet). (Viewing experience may differ according to individual perception.)

The Glasstron Personal Viewer creates an image through two separate liquid crystal displays, in close proximity to your eyes. To insure your safe use of the Glasstron, please become familiar with its basic operations, including proper fitting instructions, and be aware of any symptoms of eye fatigue or other discomfort you may experience.

Note on the LCD (Liquid Crystal Display)
The LCD screen is made with high-precision technology. However, black points or bright points of light (red, blue, or green) may appear constantly on the LCD screen. This is not malfunction. (Effective dots: more than 99.99%)

WARNING
YOUR FAILURE TO FOLLOW THESE OPERATING INSTRUCTIONS MAY RESULT IN EYE FATIGUE, EYE IMPAIRMENT, OR OTHER EYE INJURY, PROPERTY DAMAGE OR DEATH.

WARNING
THIS PRODUCT SHOULD NOT BE USED BY CHILDREN AGE 15 OR YOUNGER. THE EYES OF CHILDREN ARE STILL DEVELOPING AND MAY BE ADVERSELY AFFECTED FROM USE OF THIS PRODUCT.



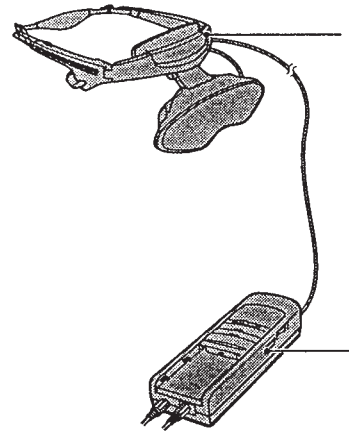
About the Glasstron

Caution: The screen is always right in front of you.

The Glasstron is a head-mounted display. With this type of display, the screen is always in front of you even if you move your head. Because of this feature, you can concentrate on the screen more easily compared with ordinary TVs and you have a sense of being in the action.

- It is easy to adjust the Glasstron to your eyes. You can use the display unit even while wearing glasses.
- Every time you use the Glasstron, the adjustment screen appears to help you adjust the display unit properly. You can also check whether the left and right screen positions are properly aligned or not.
- Cautions appear on the screen about every two hours to remind you to check for eye fatigue. The power will automatically turn off if you do not press the SEL/PUSH EXEC jog dial. If you keep using the Glasstron continuously for six hours, a warning appears on the screen and the power will turn off automatically.

The Glasstron consists of the following items:



Display unit
The display unit is equipped with two small (left and right) LCDs.
You can adjust the sound volume. You can also use the SHUTTER switch to see the surrounding environment.

Power supply box
You can use either Sony's recommended optional battery pack or alkaline batteries using an optional battery case. You can also use the house current for viewing or for charging a battery pack. To use the Glasstron, connect your video equipment to A/V IN on the power supply box.

Features

- A powerful, big screen experience comparable to watching a 52-inch screen from approximately 2 m (6.6 feet) away.
- Handy portable folding display.
- Solid and lightweight components made of magnesium alloy with the display unit weighing only 150 g (5.3 oz).
- The see-through function allows you to see the surrounding environment even while wearing the Glasstron.
- You can use the Glasstron while wearing glasses.
- You can connect optional headphones to the headphones jack to enjoy the high quality sound.
- Approximate continuous use for up to 2 hours 20 minutes with Sony's recommended battery pack, NP-F550.

This section is extracted from instruction manual.

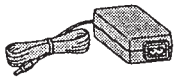
Checking the supplied accessories

Check that the following accessories are supplied with your Glasstron. If any item is not supplied, contact your Sony dealer or local authorized Sony service facility.

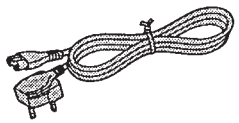
- Display unit/power supply box (1)

- Sunshades (1 pair)

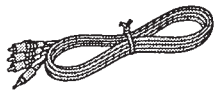
- AC power adapter AC-PLM2 (1)



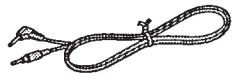
- AC power cord (1)



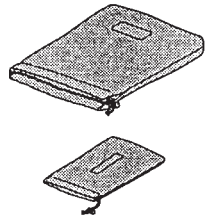
- Audio/video cable (special miniplug ⇔ phono plug) (1)



- Audio/video cable (special miniplug ⇔ special miniplug) (1)



- Carrying cases (2)

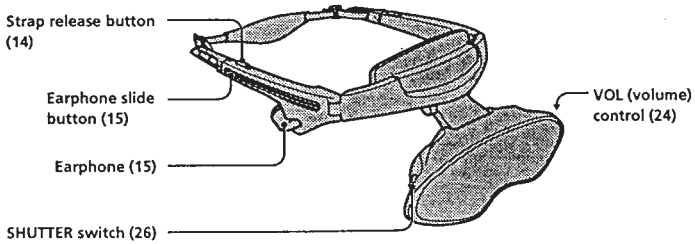


- Instructions manual (1)

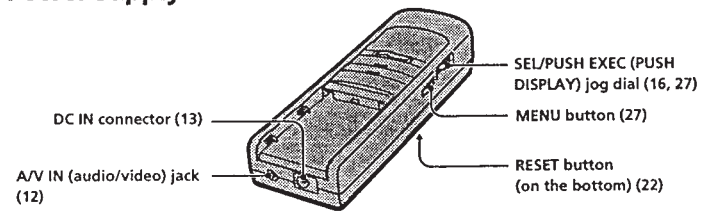
Locating the parts and controls

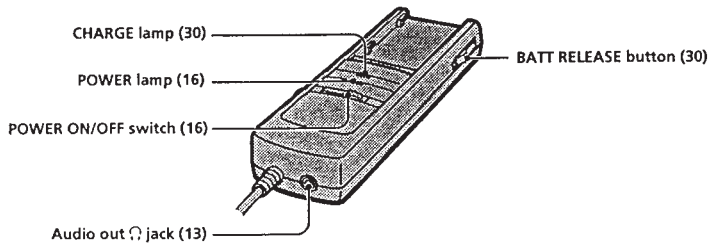
Refer to the pages indicated in parentheses ( ) for details.

Display unit



Power supply box

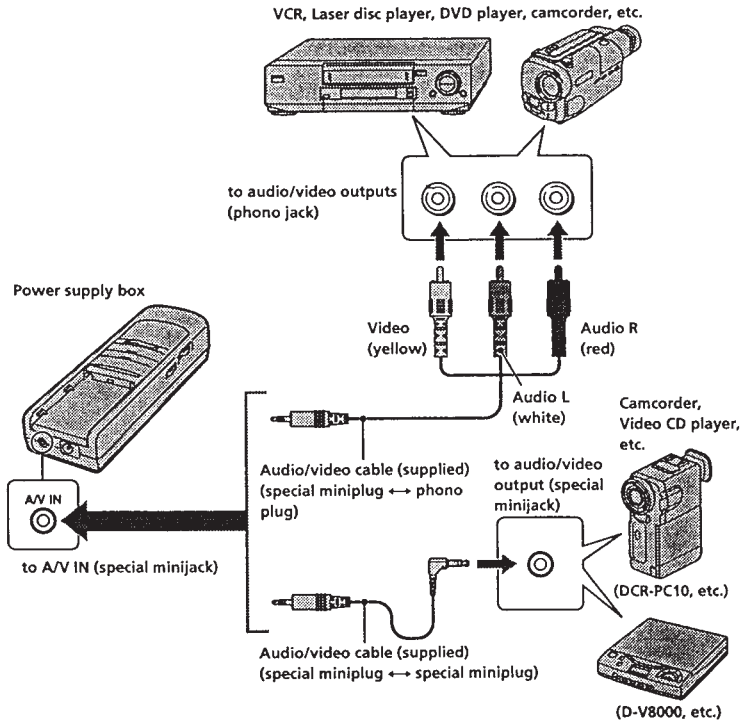

DC IN connector (13)
A/V IN (audio/video) jack (12)
SEL/PUSH EXEC (PUSH DISPLAY) jog dial (16, 27)
MENU button (27)
RESET button (on the bottom) (22)



Connecting the Glasstron

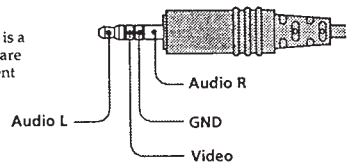
Connecting the video equipment

Connect a VCR, Laser disc player, DVD player, or camcorder to the power supply box as shown below.


VCR, Laser disc player, DVD player, camcorder, etc.
to audio/video outputs (phono jack)
Power supply box
Video (yellow)
Audio R (red)
Audio L (white)
Camcorder, Video CD player, etc.
Audio/video cable (supplied) (special miniplug ⟷ phono plug)
to audio/video output (special minijack)
A/V IN
to A/V IN (special minijack)
(DCR-PC10, etc.)
Audio/video cable (supplied) (special miniplug ⟷ special miniplug)
(D-V8000, etc.)

About the audio/video input jack

The audio/video input jack of the Glasstron is a special minijack, and the signal connections are aligned as shown on the right. This alignment may differ depending on the equipment.

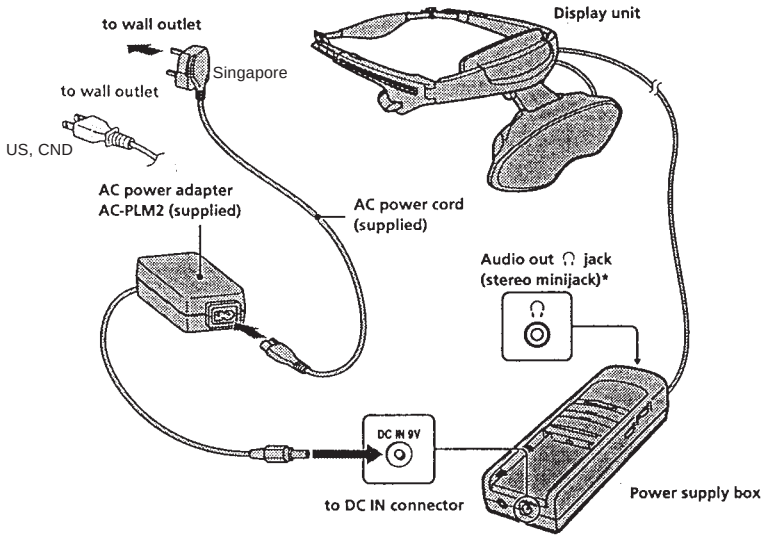


Notes

- Even if you use the supplied audio/video cable, the audio and video signals may not be carried to the Glasstron depending on the video source. In this case, contact your Sony dealer or local authorized Sony service facility.
- When you connect the Glasstron to the audio output jacks (phono jacks) of your video equipment, connect the Glasstron to both the right and left audio output jacks. If you connect the Glasstron to just one audio output jack, you will hear sound from only one of the stereo earphones.

Connecting the power source

Connect the AC power adapter AC-PLM2 (supplied) to a wall outlet. Do not connect the power source until all other connections are complete.



* You can connect an optional headphone set. When using an optional headphone set, the sound from the Glasstron earphones is muted.

Wearing the Glasstron

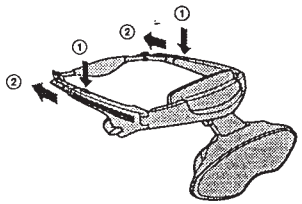
WARNING

- Failure to properly fit the product (see "Proper Fit," page 7) each time may result in eye fatigue, eye damage, or loss of visual functions and may result in accident or injury.
- This product should not be used by children age 15 or younger.
  The eyes of children are still developing and may be adversely affected by use of this product, and it may cause eye fatigue, eye damage, or loss of visual functions.
  In addition, this product may not be adjusted to fit a child's head.

If you normally wear glasses while watching TV, you can use the Glasstron while wearing glasses.

1 Loosen the back strap.

① Press and hold the strap release buttons,
② Then, loosen the back strap in the direction of the arrows.



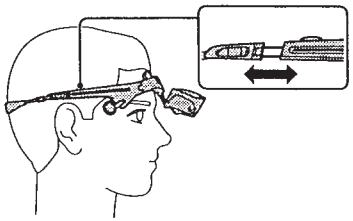
2 Put on the Glasstron.

Hold the front pad against your forehead and place the rear strap so it is fixed firmly around the back of your head.

3 Adjust the strap.

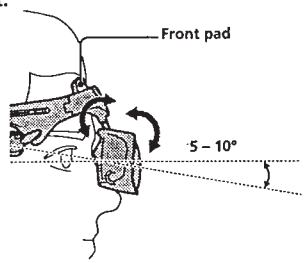
Adjust the strap after putting on the Glasstron.

Make sure the strap is snug but comfortable.



4 Adjust the angle of the display unit.

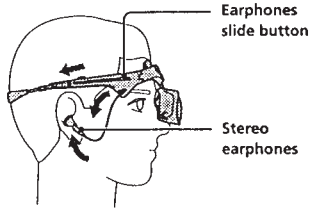
While holding the front pad against your forehead, adjust the angle of the display unit using the two hinges. Move the display unit close to your eyes at a slight downward angle. If you wear glasses, move the display unit as close to the lenses as possible.



5 Adjust the stereo earphones.

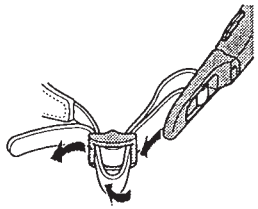
Pull the earphones out.

To adjust the slack, reel in the earphone cord by pressing the slide button in the direction of the arrow.



Adjusting the back strap

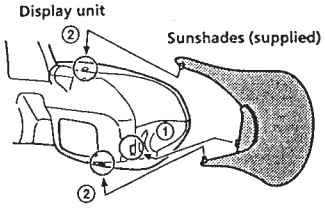
If the strap does not fit properly in step 3, adjust the strap by changing the belt length.



Attaching the sunshades

You can attach the supplied sunshades if you like. The sunshades prevent the LCD screen from reflecting light that may interfere with the picture.

Attach the sunshades on the right and left sides of the display unit by inserting the tabs on the sunshades into the holes on the display unit in the order illustrated below.



Turning on the Glasstron

After you complete all of the connections and put on the Glasstron properly, turn on the Glasstron and follow the procedures below.

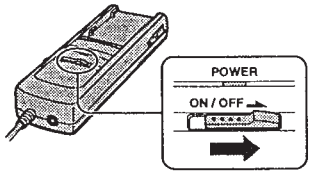
① Checking the display unit position → This page
② Checking the screen position alignment → Pages 18 through 20
③ Setting a password → Page 21
If you do not want to use a password, you have to set the Glasstron to operate without using a password in "Setting the password."

Checking the display unit position

Every time you turn on the Glasstron, the adjustment screen appears to help you adjust the display unit properly. Adjust the display unit following the procedure below.

1 Turn on the Glasstron using the POWER switch.

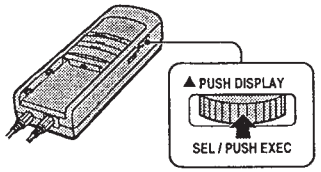
The POWER lamp lights up.



Screen

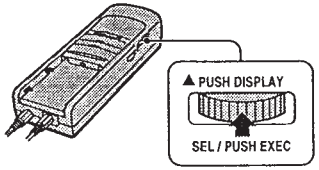
WARNING
FOR YOUR SAFETY AND TO PREVENT EYE OR OTHER INJURY, READ AND FOLLOW ALL INSTRUCTIONS IN THE USER'S MANUAL.
•◀ CHECK

2 Read the WARNING and press the jog dial.



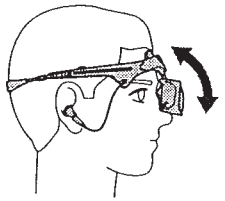
WARNING
FOR YOUR SAFETY AND TO PREVENT EYE OR OTHER INJURY, READ AND FOLLOW ALL INSTRUCTIONS IN THE USER'S MANUAL.
•◀ CHECK

3 Read the next WARNING and press the jog dial.



WARNING
THIS PRODUCT SHOULD NOT BE USED BY CHILDREN AGE 15 OR YOUNGER.
SEE THE USER'S MANUAL FOR DETAILS.
•◀ CHECK

4 Adjust the display unit so that you can see an asterisk (*) in each of the four corners as shown below.

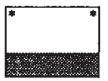


Correct

WARNING
TO CONFIRM SAFE FIT AND PREVENT EYE FATIGUE OR EYE DAMAGE, ADJUST THE DISPLAY SO THAT AN ASTERISK (*) APPEARS IN EACH CORNER.
SEE THE USER'S MANUAL FOR DETAILS.
•◀ CHECK

Incorrect

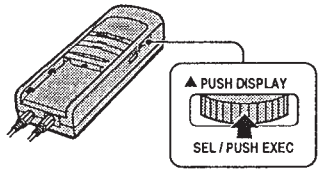
Incorrect



Incorrect

Incorrect

5 After you complete the display unit adjustment, press the jog dial.



6 Read the next WARNING, then go to "Checking the screen position alignment."

WARNING
TO PREVENT EYE DAMAGE, DO NOT USE THIS PRODUCT IF THE VERTICAL LINES DO NOT CROSS THE HORIZONTAL LINE ON THE NEXT SCREEN.
SEE THE USER'S MANUAL FOR DETAILS.
•◀ CHECK

continued

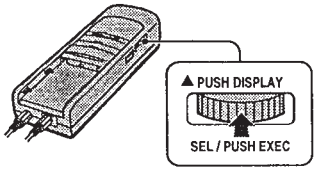
Checking the screen position alignment

WARNING

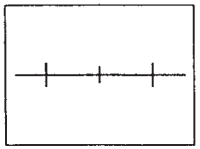
Each time this product is used, adjustment screens will appear, requiring the viewer to properly fit the product. Proper fit means that an asterisk (•) will appear in each corner of the display. To prevent eye damage, do not use this product if the vertical lines do not cross the horizontal line on the next screen.

The Glasstron includes two small (left and right) LCDs. You are watching a combined picture created from these two screens. Although the screen position is properly aligned at the factory, it may become misaligned if the Glasstron is deformed or damaged. Check the screen position alignment every time you turn on the Glasstron. If you cannot have correct screen alignment, stop using the Glasstron immediately.

1 Press the SEL/PUSH EXEC jog dial.



Screen



2 If the screens are aligned, press the jog dial.

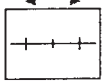
Left screen

Right screen

You may see a horizontal line on the left screen rather than the right screen and vertical lines on the right screen rather than the left screen. This is not a malfunction.

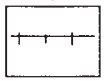
Correct

The combined picture you see with both eyes

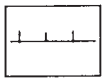


If the image you see matches one of the pictures below, you have correct screen alignment.

Correct



Correct



Correct

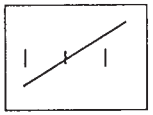
Correct

If the image you see matches one of the pictures below, stop using the Glasstron immediately. Use of the Glasstron under such conditions may cause eye fatigue or eye damage.

Incorrect

When no vertical lines cross the horizontal line.

Incorrect



When the horizontal line appears as a diagonal line.

Incorrect

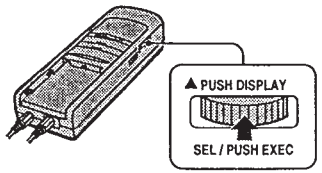
When the center vertical line does not cross the horizontal line.

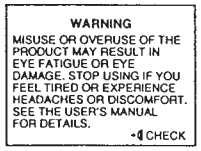
If you cannot see a proper arrangement of these lines even after resting your eyes for a few hours, the Glasstron may not be operating correctly. Contact your Sony dealer or local authorized Sony service facility.

continued

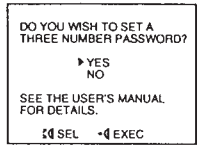
Turning on the Glasstron (continued)

3 Read the WARNING and press the jog dial.




WARNING
MISUSE OR OVERUSE OF THE PRODUCT MAY RESULT IN EYE FATIGUE OR EYE DAMAGE. STOP USING IF YOU FEEL TIRED OR EXPERIENCE HEADACHES OR DISCONFORT. SEE THE USER'S MANUAL FOR DETAILS.
•◀ CHECK

The password "YES or NO" screen appears.



Go to "Setting the password" on page 21.

Setting the password

WARNING

This product should not be used by children age 15 or younger. The eyes of children are still developing and may be adversely affected by use of this product. To prevent such use, this product has been equipped with a safety password protection system. Please use a secure password if children age 15 or younger may have access to this product.

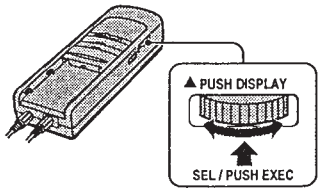
Once you set a password, you have to input the password every time you use the Glasstron. Do not forget your password. If you like, you can set the Glasstron to operate without a password.

Before you start...

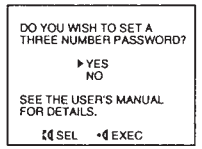
Follow the procedure in "Turning on the Glasstron" (pages 16 through 20). The password "YES or NO" screen appears on the screen.

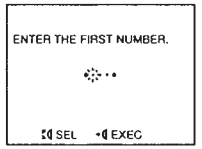
1 Select whether to set a password or not using the SEL/PUSH EXEC jog dial.

If you need to set a password, select YES. If not, select NO by turning the jog dial. Then press the jog dial. If you do not need to set a password, go to step 4 in "Using the Glasstron" (page 24).



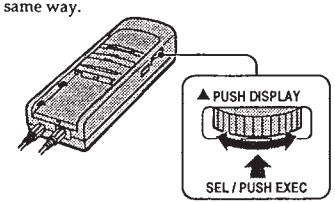
Screen

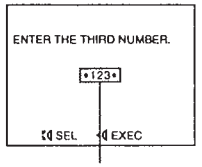




2 Enter a three digit password number, one by one, by using the jog dial.

Turn the jog dial to enter the first number, then press the jog dial. Enter the second and third numbers in the same way.





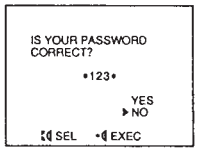
Entered password

continued

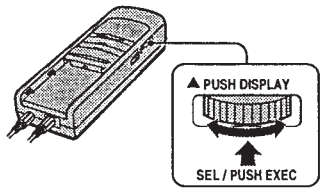
Setting the password (continued)

3 Verify a password using the jog dial.

If the password is correct, select YES by turning the jog dial. If not, select NO. Then press the jog dial.



If you select NO, return to step 1.
If you select YES, go to step 4 in "Using the Glasstron"(page 24).

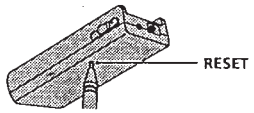


Changing the password

When the power is on, press RESET with a pointed object such as a ballpoint pen.

- If you have already read the WARNING messages (page 16 through 20) (for example, while watching a video picture), the display will return to step 1 in "Setting the password" (page 21).
- If you have not yet finished reading the WARNING messages (for example, you have forgotten your password), the display will return to step 2 in "Turning on the Glasstron" (page 16).

If you need to set a password after having set the Glasstron to operate without a password, follow the same procedure above.



Note

Pressing the RESET button does not affect picture or sound adjustments.

Using the Glasstron

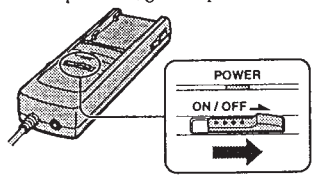
You need to set a password the first time you use the Glasstron or after you reset the Glasstron. Set the password following the procedure in "Setting the password" (pages 21 and 22).

Before you start...

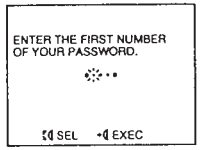
Be sure to follow the procedures in "Connecting the Glasstron" (page 12) and "Wearing the Glasstron" (page 14).

1 Turn on the Glasstron using the POWER switch.

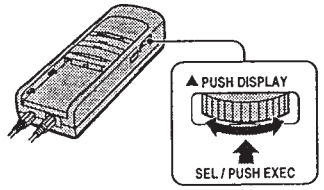
If you have set the Glasstron to operate without a password, go to step 3.

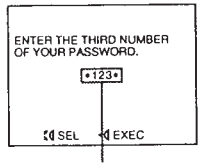


Screen



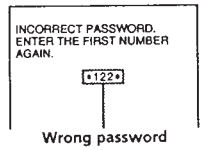
2 Turn the SEL/PUSH EXEC jog dial to enter the first number of your password, then press the jog dial. Enter the second and third numbers in the same way.





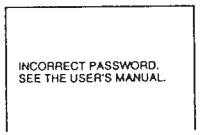
Entered password

If you enter a wrong password, the message shown on the right appears. Enter the correct password.



Wrong password

If you have entered a wrong password more than five times, after about ten seconds, the Glasstron turns off automatically.



continued

3 Follow the instructions on the screen.

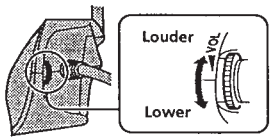
① Warning message → Follow steps 2 through 6 in "Checking the display unit position" (pages 16 and 17).
- After carefully reading the warnings and checking the display unit position, press the jog dial.

② Screen alignment page → Follow steps 1 through 3 in "Checking the screen position alignment" (pages 18 through 20).
- Read the warning carefully, and press the jog dial.
- Make sure the left and right screens are aligned, and press the jog dial.

4 Start playback on the video equipment connected to the Glasstron.

5 Adjust the volume by turning the VOL control.

When you set AVLS in the MENU to on , you cannot turn up the volume beyond the defined limit (see page 29).



Display unit

After you finish using the Glasstron

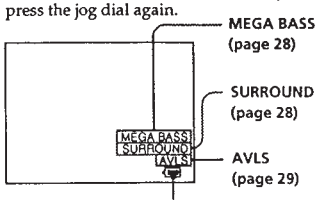
Take off the Glasstron, and turn off the power.

Note on the LCDs

The LCD screen is made with high-precision technology. However, black points or bright points of light (red, blue, or green) may appear constantly on the LCD screen. This is not malfunction.
(Effective dots: more than 99.99%)

Checking the display indication

Press the jog dial while the picture is displayed. The display indication appears on the screen for five minutes.
To turn off the indication immediately, press the jog dial again.



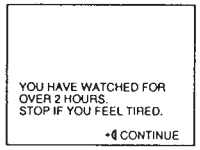
MEGA BASS (page 28)
SURROUND (page 28)
AVLS (page 29)
Remaining battery life* (page 31)

* When using the AC power adapter, the "🔌" mark appears on the screen.

Screen warnings against overuse of the Glasstron

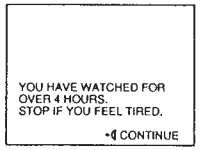
To prevent eye fatigue or eye damage, after you use the Glasstron for a fixed length of time, the following caution appears on the screen.

After about 2 hours and 15 minutes of use



Stop using the Glasstron if you feel tired or you experience headaches or discomfort.
If you want to continue using the Glasstron, press the jog dial.

After about 4 hours and 15 minutes of use

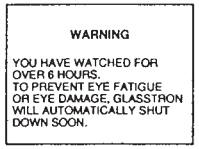


Stop using the Glasstron if you feel tired or you experience headaches or discomfort.
If you want to continue using the Glasstron, press the jog dial.

Note

If you do not press the jog dial when the cautions above appear on the screen, the Glasstron turns off automatically in both cases.

After about 6 hours of use



The power turns off automatically.

Caution: Motion sickness from viewing programs.

Some viewers may experience motion sickness, headache or nausea from viewing movies or video programs, especially those with intense action and movement. If you feel any of these symptoms, stop using the product immediately. To avoid personal injury or injury to others, do not drive a car or motorcycle, nor do anything that requires concentration until the symptoms disappear.

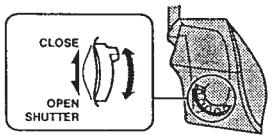
Caution: Motion sickness from external motion.

Do not use the product while subject to external motion — for example, as a passenger in a car. Use of this product under these conditions may cause motion sickness.

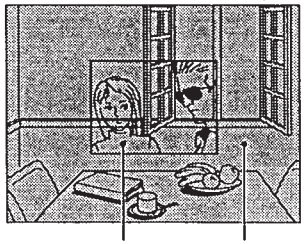
Viewing the surrounding environment (See-through)

While you are wearing the Glasstron, you can view the surrounding environment through the screen by opening the shutter in the display unit.

Turn the SHUTTER switch to OPEN.



Display unit



The picture becomes transparent.

The area surrounding the picture also becomes transparent.

Adjusting the sound and picture

You can adjust the following items using the menu display.

BRIGHTNESS: Adjusts the picture brightness.

HUE: Adjusts the hue, if the picture looks too red or green.

COLOR: Adjusts the color intensity.

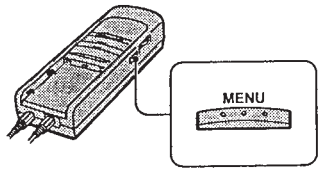
MEGA BASS: Creates a deep, powerful sound by emphasizing the bass sound.

SURROUND: Gives presence to the sound.

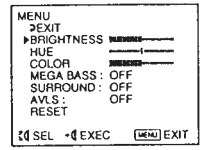
AVLS (Auto Volume Limiter System): Keeps down the maximum volume to protect your ear. You cannot turn up the volume beyond the defined limit even if you try to turn it up.

1 **Press MENU.**

The menu display appears on the screen.

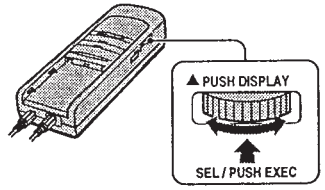


Screen



2 **Turn the SEL/PUSH EXEC jog dial to select the desired item, then press the jog dial.**

The setting screen of the selected item appears.



3 **Adjust the setting using the jog dial.**

For details on each item, see pages 28 and 29.

To set other items, repeat steps 2 and 3.

4 **Press MENU.**

The menu display goes off.

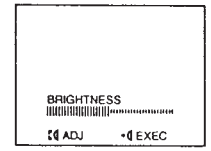
You can also turn off the menu display by selecting EXIT in the menu using the jog dial.

continued

Adjusting the sound and picture (continued)

BRIGHTNESS

Turn the jog dial to adjust the brightness, then press the jog dial.



darker ← → brighter

COLOR

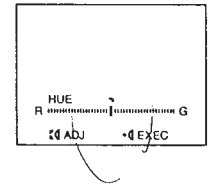
Turn the jog dial to adjust the color intensity, then press the jog dial.

less ← → more

HUE

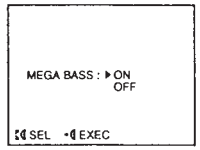
Turn the jog dial to adjust the hue, then press the jog dial.

- If the picture is too greenish, turn it to R (red).
- If the picture is too reddish, turn it to G (green).



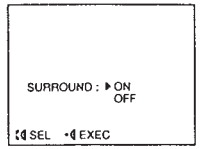
MEGA BASS

Turn the jog dial to set to ON, then press the jog dial.



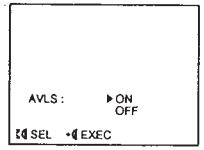
SURROUND

Turn the jog dial to set to ON, then press the jog dial.

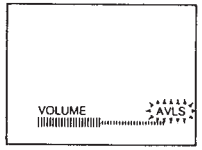


AVLS (Auto Volume Limiter System)

Turn the jog dial to set to ON, then press the jog dial.



If the volume bar indication reaches the center position when AVLS is on, the indication goes no further to the right and the AVLS indicator appears on the screen.

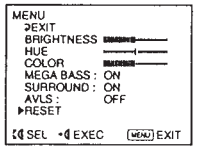


Note

If the audio input level is too high when AVLS in on, the sound may be distorted. In this case, turn the volume down using the VOL control on the display unit.

Resetting the adjustment to the factory preset level

Turn the jog dial to select RESET in the menu, then press the jog dial.



Note

The settings are retained even when you turn off the power.

Using with power sources other than the AC adapter

Using the battery pack (not supplied)

If you use a battery pack such as the NP-F550/F750/F950, you can use the Glasstron without connecting to a wall outlet.

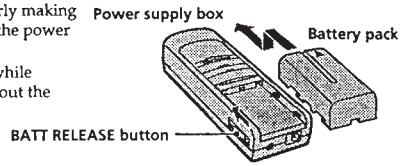
Charging the battery pack

Charge the battery pack before use. You can charge the battery pack using the power supply box. If you attach the battery pack as described below, the battery pack charges while you are not using the Glasstron.

1 Attach the battery pack to the power supply box.

Install the battery pack properly making sure it is not crooked against the power supply box.

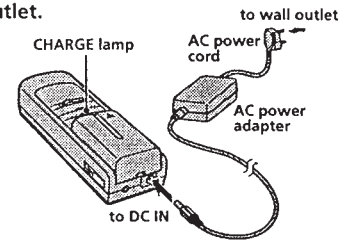
To remove the battery pack, while sliding BATT RELEASE, pull out the battery pack.



2 Connect the AC power adapter to the DC IN connector on the power supply box. Then, connect the AC power cord to the AC power adapter and to a wall outlet.

Charge the battery pack on a flat place without vibration. The CHARGE lamp lights up. When the battery pack is fully charged, the CHARGE lamp goes out.

Battery life and charging time are shown in the table below.



	Battery life (fully charged battery)	Charging time
NP-F550	Approx. 2 hours 20 minutes	Approx. 8 hours
NP-F750	Approx. 4 hours 40 minutes	Approx. 16 hours
NP-F950	Approx. 6 hours	Approx. 24 hours

* The battery life and charging time may change depending on the conditions of use.
* You can also use a battery pack such as the NP-500/510/710/F530/F730/F930 (not supplied) with the Glasstron.
* You can use an InfoLITHIUM battery pack with the Glasstron. When using such a battery pack, the estimated remaining battery life is displayed not with the time counter but with the indicator.

Notes

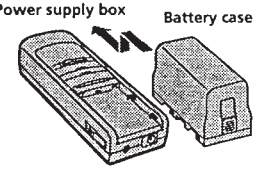
- If the POWER lamp flashes while using the battery pack, charge the battery pack.
- If the CHARGE lamp flashes, the power supply box or battery pack is malfunctioning. Contact your Sony dealer or local authorized Sony service facility.
- Battery life may be shorter in a cold environment. This is a typical battery characteristic.

Using alkaline batteries (not supplied)

You can use alkaline batteries in a battery case such as the EBP-L7 (not supplied).

Insert six AA (R6) size alkaline batteries by matching the + and – on the batteries to the diagram inside the battery case.

Attach the battery case to the power supply box.



Battery Life: Approx. 2 hours*

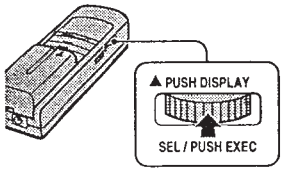
* The battery life when using six new Sony alkaline batteries continuously in an environment of normal temperature about 25°C (77°F). Battery life may be shorter in a cold environment.

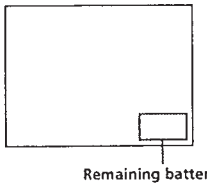
Notes

- Use only alkaline batteries. You cannot use manganese batteries.
- If the POWER lamp flashes while using the batteries, the batteries are weak. Replace all the batteries with new ones.
- While the battery case is in use, do not give a mechanical shock to the battery case.
- While the battery case is in use, do not connect the AC power adapter. It may cause battery leakage.

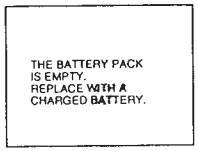
Checking the remaining battery life

When no indication or caution appears on the screen, press the jog dial.





When the battery pack or alkaline batteries is/are weak, the following message appears on the screen. Replace the battery pack with a charged one, or all the batteries in the battery case with new ones.

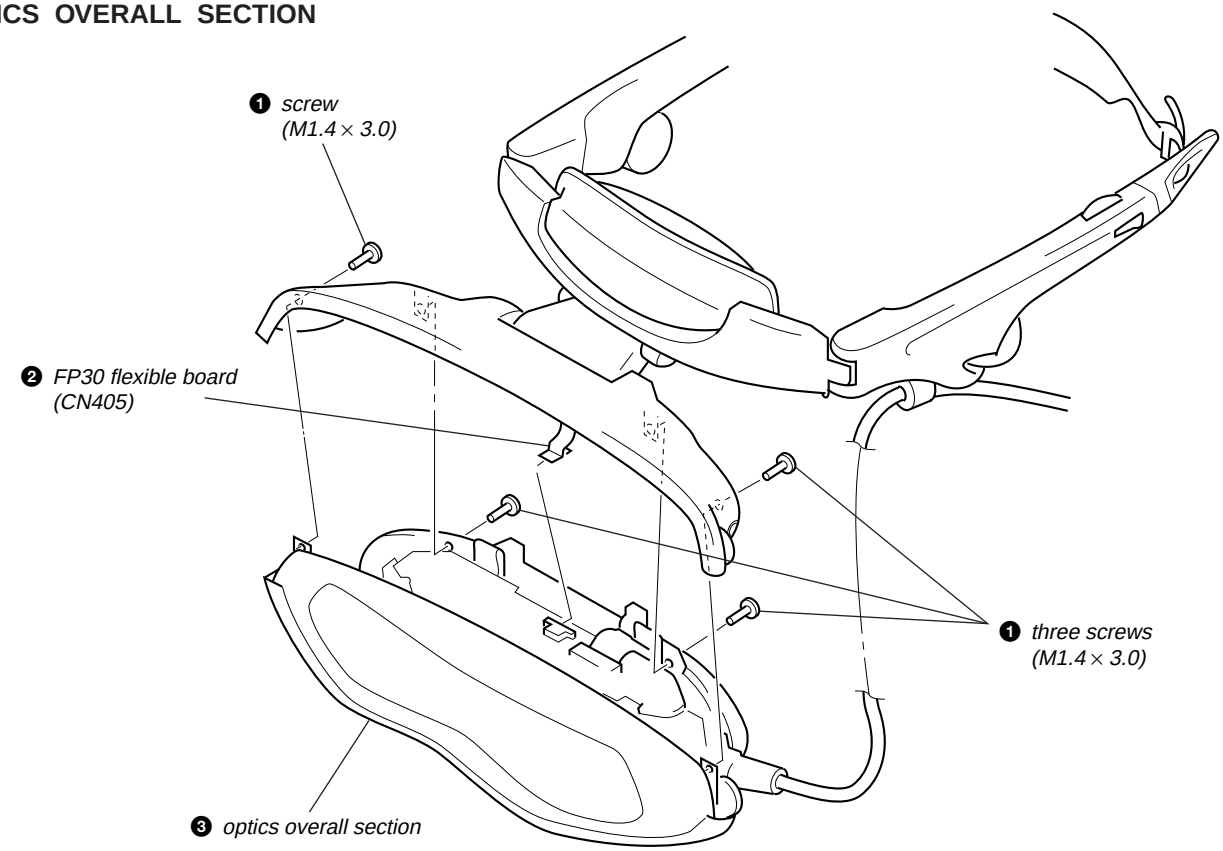


When using the AC power adapter, the "🔌" mark appears on the screen.

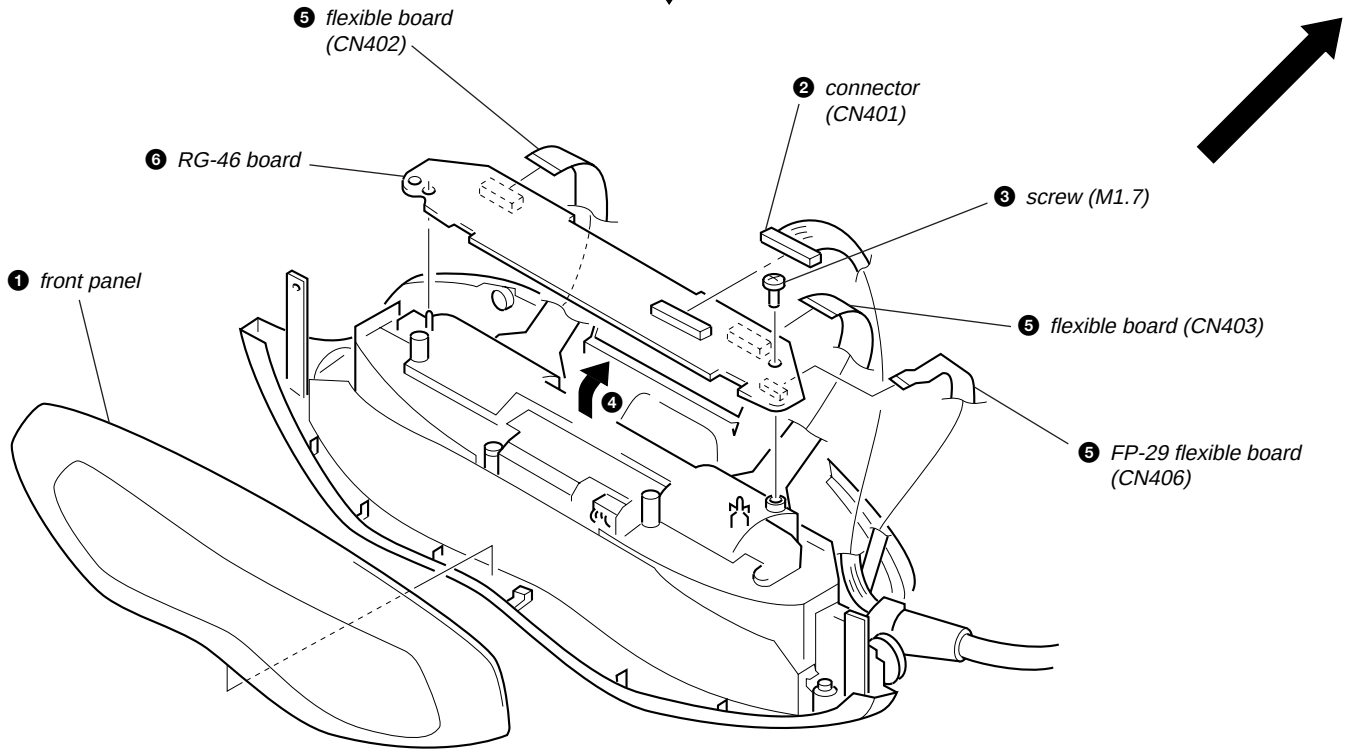
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

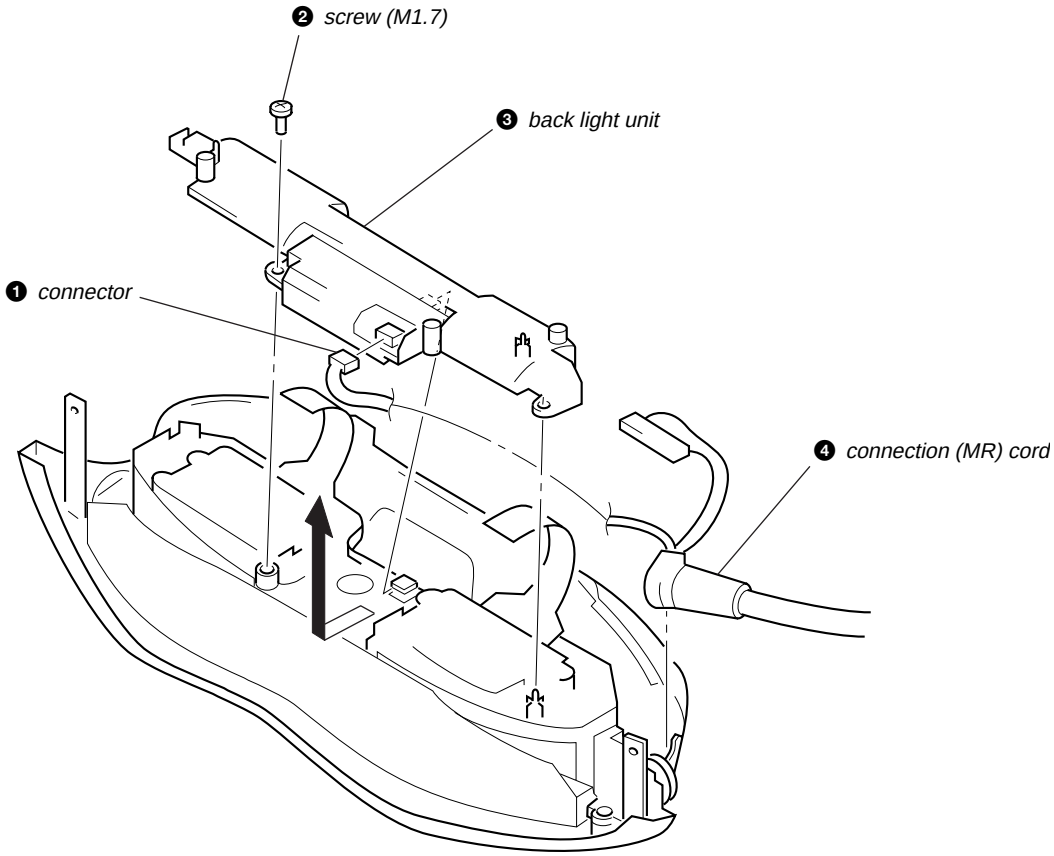
OPTICS OVERALL SECTION



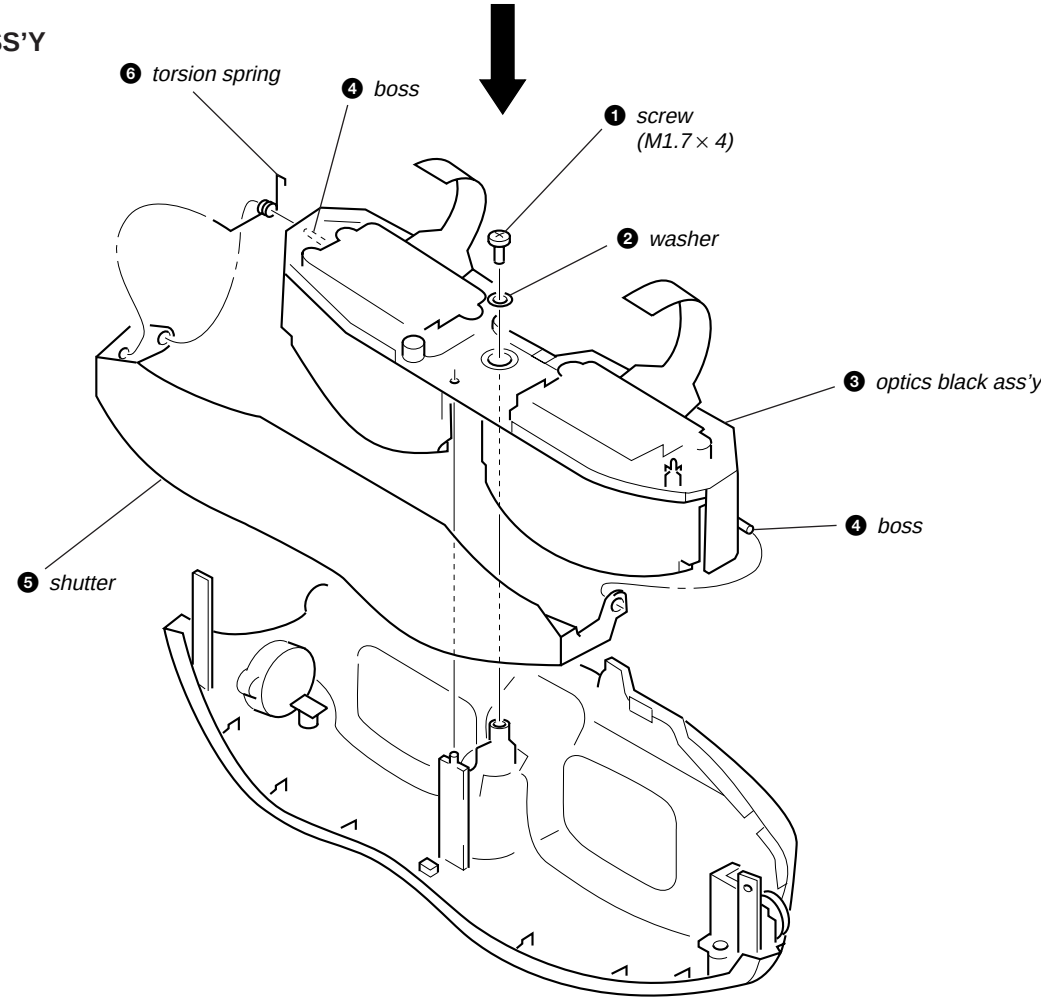
RG-46 BOARD



BACK LIGHT UNIT



OPTICS BLOCK ASS'Y



SECTION 3
ELECTRICAL ADJUSTMENTS

Precautions on adjustment:

1. Perform the adjustment in the given order.
2. Power supply voltage: DC 9.0 V
3. Equipment required
   Electrical adjustment requires the following measuring equipment.

(1) Oscilloscope: 2 phenomena, band 30 MHz or more, with delay mode (use 10 : 1 probe unless otherwise specified)
(2) Pattern generator
(3) Digital voltmeter
(4) Frequency counter
(5) Connector for adjustment

4. Measurement points for adjustment are located at CN102 on the YM-11 board for VIDEO block, and at CN404 on the RG-46 board for LCD block. The pin No. and signal name of CN102 and CN404 are listed below.

• YM-11 Board, CN102

Pin No.	Signal Name	Pin No.	Signal Name
1	T.GND	6	HAFC
2	$\overline{\text{FREE RUN ON}}$	7	POWER SW
3	LANC SIG	8	Y
4	V IN	9	VCLVL
5	CHK BL+B	10	SC OUT

• RG-46 Board, CN404

Pin No.	Signal Name	Pin No.	Signal Name
1	GND	6	B OUT
2	EAC OFF	7	HP RET
3	HP L	8	R OUT
4	G OUT	9	PCO
5	HP R	10	N.C

5. Setting Method of External Video Input Mode
   Turn the POWER switch on, and operate the SEL/PUSH EXEC jog dial, so that the EXT. VIDEO IN mode becomes active.
   (Refer to item 9 on page 22)

6. Setting up Input Signals
   In adjusting this set, video signals obtained from the pattern generator are used, and therefore these video output signals must satisfy the specification. Connect the oscilloscope to the VIDEO IN terminal, and confirm that the sync signal amplitude of video signals is approximately 0.3 V, the amplitude of video part is approximately 0.7 V, burst signal amplitude is approximately 0.3 V and flat, and the level ratio of burst signal to "red" signal is 0.30 : 0.66.
   Where "chroma signal, and color bar signal with burst signal turned off" is specified in the text, enter chroma signal and color bar signal of which burst signal is turned off to the VIDEO IN terminal as video input signals for adjustment.

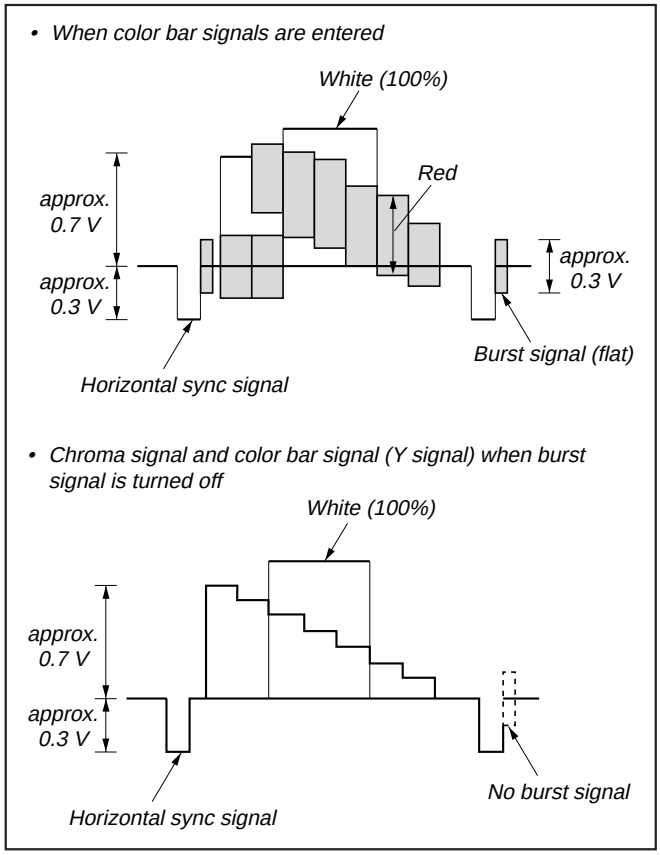
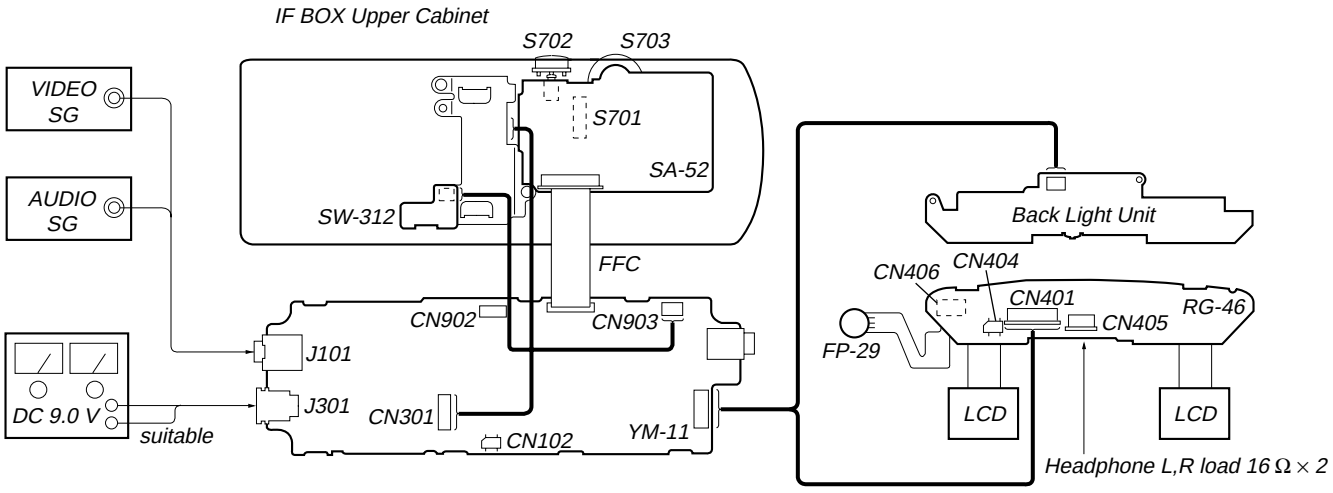


Fig. 3-1. Pattern generator's color bar signals

Preparation:
Connect all electrical blocks as shown below.



POWER SUPPLY BLOCK

[Power supply voltage check] (YM-11 board)

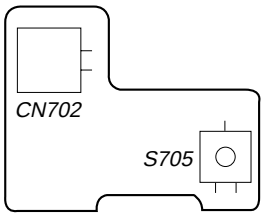
1. Turn the POWER switch on, and confirm that the POWER LED (green) lights up.
2. Confirm that the voltage at each check land (CL) on the YM-11 board satisfies the specification value in Table below. As the ground, use J101 pin ① GND.

Input	No signal input
Measuring equipment	Digital voltmeter
V 5.0 V check	
Measurement point	CL305
Specification value	4.85 ± 0.1 V
D 5.0 V check	
Measurement point	CL307
Specification value	4.95 ± 0.1 V
13.5 V check	
Measurement point	CL306
Specification value	13.50 ± 0.2 V
AU 2.0 V check	
Measurement point	CL308
Specification value	1.85 ± 0.1 V

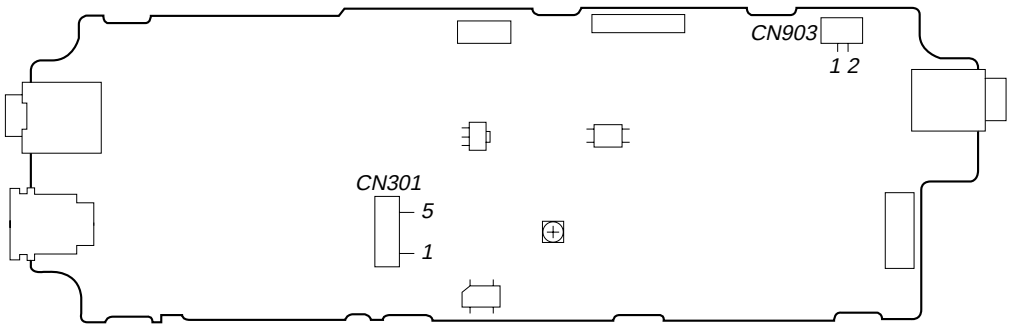
3. Press the battery detection switch (S705) on the SW-312 board. (Switch with fixed pawl at the lower right of battery)
   Or, short CN903 pin ① and pin ② on the YM-11 board. (CHARGE mode becomes active.) At this time, confirm that the CHARGE LED (orange) lights up.
4. Under this condition, confirm that the voltage of CN301 pin ① on the YM-11 board is 8.4 ± 0.1 V.
5. After checking, remove a jumper wire used for short in step 3.

Check Parts:

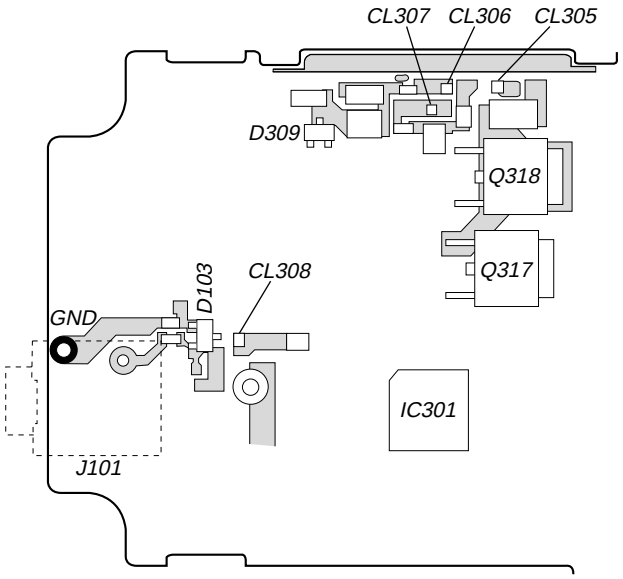
[SW-312 board] (Component side)



[YM-11 board] (Side A)



[YM-11 board] (Side B)



[Preparation for Preset Data Writing, Battery Down Adjustment, and Charge Threshold Level Adjustment]

① "Preset Data Writing", "Battery Down Adjustment", "Charge Threshold Level Adjustment" and all adjustments of "Video Block" must be performed, if IC901 (EEPROM) on the YM-11 was replaced.

② "Battery Down Adjustment" and "Charge Threshold Level Adjustment" must be performed, if IC902 (5 V REG.) or IC903 (microprocessor) on the YM-11 was replaced.

③ All adjustments of "Video Block" must be performed, if IC101 (OSD), IC103 (Y/C separation), IC201 (Y/R-Y/B-Y decoder) on the YM-11 board, or IC401 (LCD driver) on the RG-46 board, or LCD (optical block) was replaced.

1. Service Jigs

(1) Adjusting remote commander (RM-95-modified)

Note 1: J-6082-053-B

(2) Extension cable (for remote commander plug converter) J-6082-291-A

Note 1: The page will not be changed over, unless the microprocessor in the adjusting remote commander is a new one (UPD7503-G-C56-12). In such a case, replace with new microprocessor (8-759-148-35).

2. Adjusting Remote Commander

For the adjustment, the adjustment data saved in the nonvolatile memory (EEPROM) must be rewritten, and for this purpose the adjusting remote commander is used.

The adjusting remote commander makes two-way communication with the product using a remote control signal line (LANC). The adjusting remote commander transmits pages, addresses, and data up/down commands to the product. The product transmits pages, addresses, and data to the adjusting remote commander.

3. How to Use Adjusting Remote Commander

(1) Connect the adjusting remote commander to the CN902 on YM-11 board via extension cable (J-6082-291A).

(At this time, set the switch of extension cable to OFF (OPEN) position.)

Turn ON the power on the set.

(2) Set the HOLD switch on the adjusting remote commander to the HOLD (SERVICE) position.

If connection is normal, the LCD display on the adjusting remote commander will be as shown in Fig.3-2.

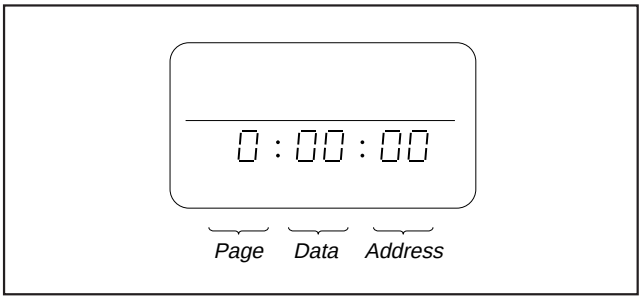


Fig. 3-2

Adjusting Remote Commander RM-95 (J-6082-053-B)

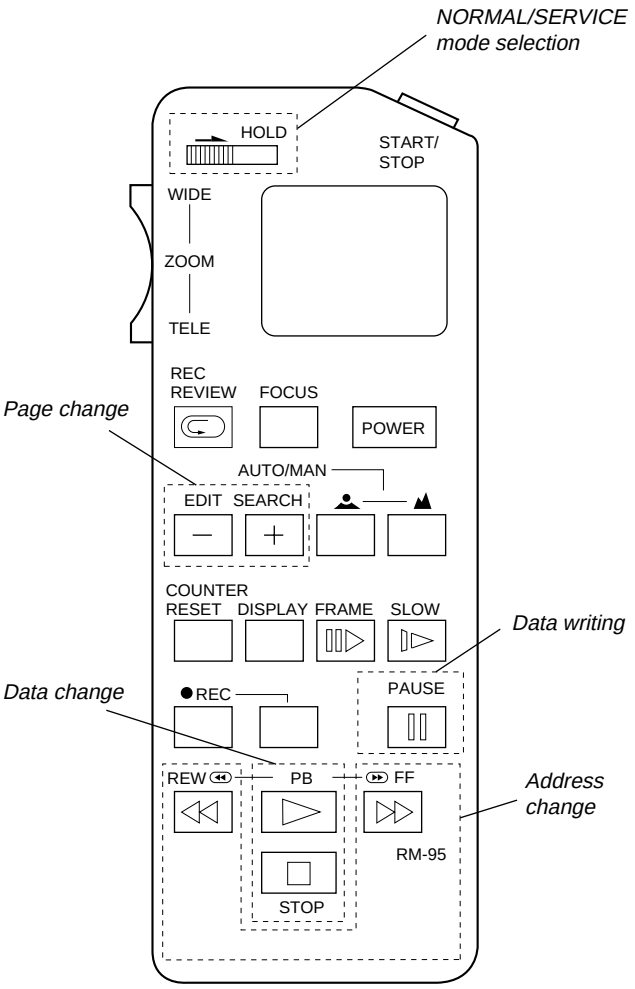


Fig. 3-3

(3) Operate the adjusting remote commander as follows:
- Page change
  Press the EDIT SEARCH + button to increase the page.
  Press the EDIT SEARCH – button to decrease the page.
  There are 16 pages from 0 to F.

Hexadecimal numbers	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal conversion	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

- Address change
  Press the FF (▶▶) button to increase the address.
  Press the REW (◀◀) button to decrease the address.
  There are 256 addresses from 00 to FF.
- Data change (data setting)
  Press the PLAY (▶) button to increase the data.
  Press the STOP (■) button to decrease the data.
  There are 256 data from 00 to FF.
- Adjustment data writing
  The PAUSE button must be pressed to write adjustment data (D page) to the nonvolatile memory (EEPROM). (Unless the PAUSE is pressed, new data are not saved in the non-volatile memory.)

(4) Select page: 1, address: 00, and set 01 data. Thus, the data input to page: D, address: 00 – 1A is enabled.

(5) After the adjustment finished, select page: 1, address: 00, and set 00 data. Thus, the data change on page D is disabled.

(6) After all adjustments finished, turn OFF the main power supply (9.0 V) once.

4. Precaution on Use of Adjusting Remote Commander
   Misoperation of the adjusting remote commander could erase correct data. To prevent this, it is recommended to make a note of data from address 00 to 4B on page D before adjust-ment, and also to make a note of new adjustment data each time the adjustment of one item is finished.

5. Data Processing

Certain adjustment items require the microprocessor data to be read out or the displayed data (hexadecimal numbers) on jigs or adjusting remote commander to be calculated to get adjustment data. In such a case, convert hexadecimal numbers into decimal numbers once, then make calculation, and convert its result into hexadecimal number as adjustment data. Table 1 shows hexadecimal – decimal number conversion.

Hexadecimal – Decimal number conversion.

Lower digit of hex. / Higher digit of hex.	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d) ②	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
①→ B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Table 1.

Note: Data in ( ) are displayed on jig or adjusting remote commander.

Example: If display on jig or adjusting remote commander is BD (bd)

As higher digit of hex. number is B (b) and lower digit is D (d), the intersection "189" of ① and ② in Table 1 is the target decimal number.

6. Power ON Procedure for Adjustment

(1) Connect an extension cable to the adjusting remote commander.

(2) After making sure that the HOLD switch on the adjusting remote commander is not turned on (not at left (NOR) position), supply 9.0 Vdc to the DC IN (J301).
(With the HOLD switch at HOLD position, the initial operation of the set does not finish, disabling the POWER switch function.)

(3) Turn ON the POWER switch on the set. Confirm that a green LED lights up.

(4) Set the HOLD switch on the adjusting remote commander to the HOLD (right (ADJ)) position.

7. Adjustment Finishing Procedure

Order	Page	Address	Data	Description	Remarks
1.	D	01 – 4B		Check if adjusted data are written correctly to the given page and address.	
2.	2	00	00	Set 00 to given page and address.	Page 2: Reset
3.	1	00	00		Page D: Write protect
4.	Set HOLD switch on adj. remote commander to NOR position.				

8. Password Reset (for operation check of the set)

(1) Turn the POWER switch on, then press the “Password Reset” at the bottom of Power Box to reset the password set by the customer.

(2) Operating the jog dial, select “No” on the Password Set screen to set “disuse of password”.
Or,

Order	Page	Address	Data	Description	Remarks
1.	1	00	01	Set 01 to given page and address.	Page D: Cancel protect
2.	D	04	FF	Set FF to given page and address and press PAUSE.	Set disuse of password
Final:	After all adjustments and operation check finished, turn the POWER switch on, press the "Password Reset" at the bottom of Power Box, and turn the POWER switch off.				

9. EXT. VIDEO AUDIO mode: Turn the POWER switch on, and press and operate the jog dial from the initial screen.
Or,

Order	Page	Address	Data	Description	Remarks
1.	2	00	01	Set 01 to given page and address.	
2.	2	2B	00	Set 00 to given page and address.	

10. Picture and tone quality standard setting: Press the Menu key and SEL/PUSH EXEC “RESET” with the jog dial.
Or,

Set data 01 to page:1, address:00 to cancel the protect on page D.

Order	Page	Address	Data	Description	Remarks
	D	3C	00	Set data 00 to given page and address, and press PAUSE.	Ope. – Brightness: Center
	D	3D	00		Ope. – Hue: Center
	D	3E	00		Ope. – Contrast: Center
	D	3F	00		Ope. – Bass boost: OFF
	D	40	00		Ope.– Surround: OFF
	D	41	00		Ope. – VOL. limit: OFF

Volume (Display unit) – Maximum

[Preset Data Writing]

Connection:

(1) Connect the adjusting remote commander to the CN902 on YM-11 board.

Data Writing Procedure

(1) Set data: 01 to page: 1, address: 00.
(2) Enter the data given in the table below.
Note: To write the data to the EEPROM, press the PAUSE button on the adjusting remote commander each time the data is set.
(3) After writing all data, set data: 00 to page: 1, address: 00.

D Page Adjustment Address and Initial Value

Data in ( ) in Initial set column are different from the data adjusted at the shipment.
Make setting and adjustment only when IC901 (EEPROM) was replaced.
Data in Memo column are fixed value. Always set to this value.

Address	Data		Remarks
	Initial set	Memo	
00	00	00	Fixed value
01	00	00	
02	00: US/CND 40: SP	00: US/CND 40: SP	
03	00	00	
04	FF		Set disuse of password
05	0A		Set password
06	0A		
07	–	–	Not used
08			Battery down adj.
09			
0A			
0B			
0C			
0D	10	10	Fixed value
0E			Charge adjustment
0F			
10			
11			
12			
13	56	56	Fixed value
14	F0	F0	
15	14	14	
16	28	28	
17	0B	0B	
18	40	40	
19	01	01	
1A	E0	E0	
1B	01	01	
1C	01	01	
1D	–	–	Not used
1E	–	–	
1F	–	–	
20	(70)		Video, LCD adj.
21	(36)		
22	(89)		
23	(8F)		
24	(60)		
25	(8F)		
26	(86)		

Address	Data		Remarks
	Initial set	Memo	
27	(7D)		Video, LCD adj.
28	(C0)		
29	(C0)		
2A	–	–	Not used
2B	(82)		Video, LCD adj.
2C	–	–	Not used
2D	–	–	
2E	(87)		Video, LCD adj.
2F	(83)		
30	(7F)		
31	(8F)		
32	–	–	Not used
33	–	–	
34	–	–	
35	–	–	
36	–	–	
37	–	–	
38	–	–	
39	–	–	
3A	–	–	
3B	–	–	
3C	00	(00)	Menu: Brightness
3D	00	(00)	Menu: Hue
3E	00	(00)	Menu: Contrast
3F	00	(00)	Menu: Bass boost
40	00	(00)	Menu: Surround
41	00	(00)	Menu: VOL. limit
42			Battery down adj.
43			
44			
45			
46			
47	10	10	Fixed value
48	08	08	
49	02	02	
4A	08	08	
4B	03	03	

Set 00 during adj.

- Abbreviation
  CND: Canadian model
  SP : Singapore model

[Battery Down Adjustment]

Mode	Video/audio signals are output
Signal	VIDEO IN: Color bar AUDIO IN L: 1kHz, 20 dBs AUDIO IN R: 1kHz, 20 dBs
Measurement point	Displayed data on adj. remote commander
Measuring equipment	
Adjustment page	D
Adjustment address	08, 09, 0A, 0B, 0C, 0D, 42, 43, 44, 45, 46
Specification value	ZZh = 5Ah ± 04h

Connection:

Referring to Fig. 3-4, connect the following equipment.

(1) Connect the regulated power supply and a digital voltmeter to the battery terminal.
(2) Connect the adjusting remote commander to the CN902 on YM-11 board.
(3) Connect a pattern generator to the VIDEO IN terminal.
(4) Connect an audio oscillator and attenuator to the AUDIO IN terminal.

Menu Setting:

(Picture and tone quality setting) (see page 22)

Adjustment Procedure:

(1) Adjust the output voltage of regulated power supply so that the battery terminal voltage is 7.2 Vdc.
(2) Turn ON the POWER switch on the set.
(3) Operate the jog dial on the set so that the video and audio signals are output. (EXT. VIDEO AUDIO mode)
(See page 22)
(4) Set data: 01 to page: 1, address: 00.
(Cancel D page protect)
(5) Set data: 01 to page: 2, address: 00.
(6) Adjust the output voltage of regulated power supply so that the battery terminal voltage is 5.77 ± 0.02 Vdc.
(7) Read data (ZZh) on page: 2, address: 27.
(8) Confirm that the data (ZZh) satisfies the specification value.
(9) Using the following formulas (calculation of hexadecimal numbers), calculate the adjustment data and enter them to respective adjustment addresses.
(Refer to 5. Data Processing on page 21)

Address: 08 D_{08} = ZZh + 25h
Address: 09 D_{09} = ZZh + 20h
Address: 0A D_{0A} = ZZh + 19h
Address: 0B D_{0B} = ZZh + 0Ch
Address: 0C D_{0C} = ZZh
Address: 42 D_{42} = ZZh + 1Ch
Address: 43 D_{43} = ZZh + 10h
Address: 44 D_{44} = ZZh + 0Bh
Address: 45 D_{45} = ZZh + 05h
Address: 46 D_{46} = ZZh – 02h

Note: After setting each data, be sure to press the PAUSE button on the adjusting remote commander.

(10) Set data: 10 to page: D, address: 0D, and press the PAUSE button on the adjusting remote commander.
(11) Set data: 10 to page: D, address: 47, and press the PAUSE button on the adjusting remote commander.
(12) Set data: 00 to page: 2, address: 00.
(13) Set data: 00 to page: 1, address: 00.

[Charge Threshold Level Adjustment]

Mode	Power ON
Signal	Any
Measurement point	Displayed data on adj. remote commander
Measuring equipment	
Adjustment page	D
Adjustment address	08, 09, 0A, 0B, 0C
Specification value	YYh = D8h ± 06h

Connection:

Referring to Fig. 3-4, connect the following equipment.

(1) Connect the regulated power supply and a digital voltmeter to the battery terminal.
(2) Connect the adjusting remote commander to the CN902 on YM-11 board.

Adjustment Procedure:

(1) Adjust the output voltage of regulated power supply so that the battery terminal voltage is 7.2 Vdc.
(2) Turn ON the POWER switch on the set.
(3) Set data: 01 to page: 1, address: 00.
(4) Set data: 01 to page: 2, address: 00.
(5) Set data: 01 to page: 2, address: 2C.
(6) Adjust the output voltage of regulated power supply so that the battery terminal voltage is 8.3 ± 0.02 Vdc.
(7) Read data (YYh) on page: 2, address: 2D.
(8) Confirm that the data (YYh) satisfies the specification value.
(9) Using the following formulas (calculation of hexadecimal numbers), calculate the adjustment data and enter them to respective adjustment addresses.
(Refer to 5. Data Processing on page 21)

Address: 0E $D_{0E} = YYh + 04h$
Address: 0F $D_{0F} = YYh$
Address: 10 $D_{10} = YYh – 5Ah$
Address: 11 $D_{11} = YYh – 55h$
Address: 12 $D_{12} = YYh + 09h$

Note: After setting each data, be sure to press the PAUSE button on the adjusting remote commander.

(10) Set data: 00 to page: 1, address: 00.
(11) Set data: 00 to page: 2, address: 00.
(12) Set data: 00 to page: 2, address: 2C.

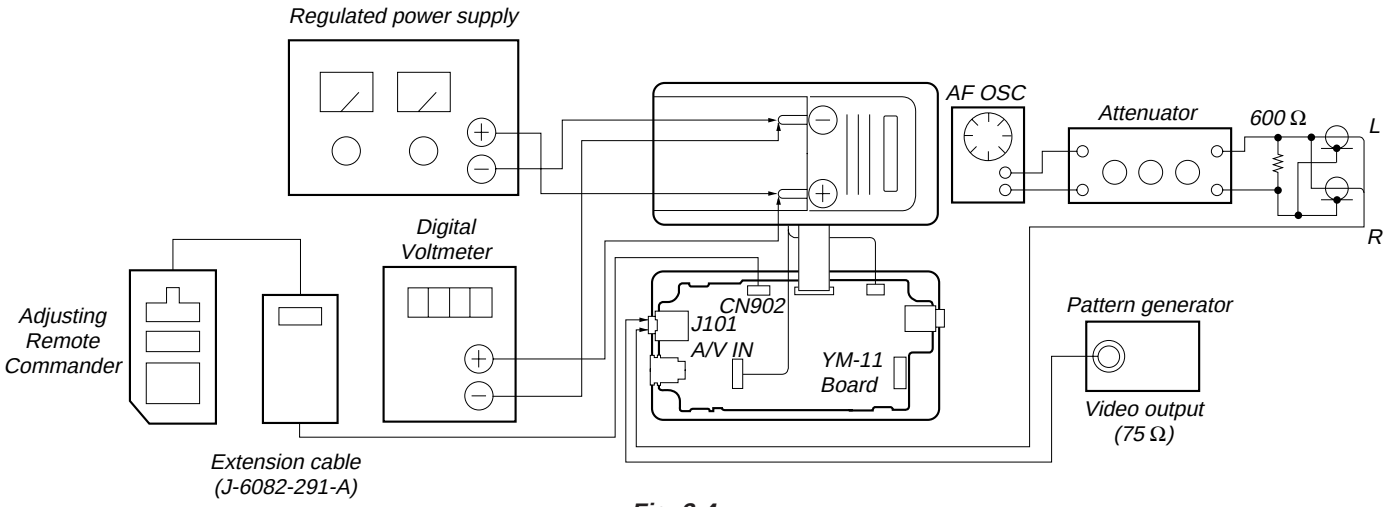
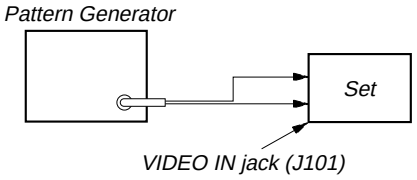


Fig. 3-4

VIDEO BLOCK

To adjust the video block, connect a pattern generator as shown below. As video input signals for adjustment, enter video output signals (color bar signals), unless otherwise specified. (For details, see page 17)

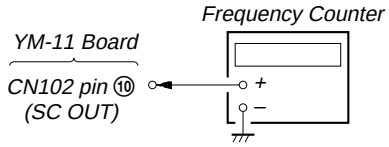


[Color Demodulation Subcarrier Adjustment]

Condition:

Input signal	No signal
Measurement point	YM-11 board CN102 pin ⑩
Measuring equipment	Frequency Counter
Adjustment page	D
Adjustment address	2F
Specification value	3.579545 MHz ± 20 Hz

Connection:



Adjustment Procedure:

(1) Connect a frequency counter to the CN102 pin ⑩ on YM-11 board.
(2) Connect CN102 pin ② and pin ① on the YM-11 board. (OSD internal video signal OFF)
(3) Set (or confirm) data: 01 to page: 1, address: 00. (Cancel D page protect)
(4) On page: D, address: 2F, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that the frequency counter reading satisfies the specification value.
(5) Disconnect CN102 pin ② and pin ① on the YM-11 board. (OSD internal video signal ON)

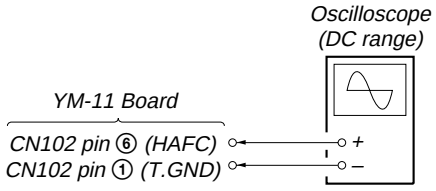
Adjustment and Adjustment Parts: YM-11 board (see page 33)

[OSD (On-Screen Display) Horizontal Sync Frequency Adjustment]

Condition:

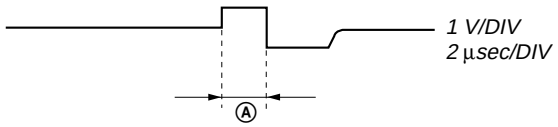
Input signal	Color bar signal
Measurement point	YM-11 board CN102 pin ⑥
Measuring equipment	Oscilloscope
Adjustment device	RV101 on YM-11 board
Specification value	2.2 ± 0.1 µS

Connection:



Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode. (See page 22)
(2) Connect an oscilloscope to the CN102 pin ⑥ on YM-11 board.
(3) Adjust RV101 on the YM-11 board so that the Ⓐ level of waveform on the oscilloscope satisfies the specification value.



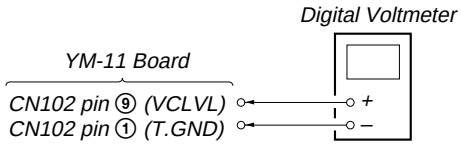
Adjustment and Adjustment Parts: YM-11 board (see page 33)

[OSD (On-Screen Display) Internal Signal DC Level Adjustment]

Condition:

Input signal	Color bar signal
Measurement point	YM-11 board CN102 pin ⑨
Measuring equipment	Digital voltmeter
Adjustment page	D
Adjustment address	2E
Specification value	2.5 ± 0.1 V

Connection:



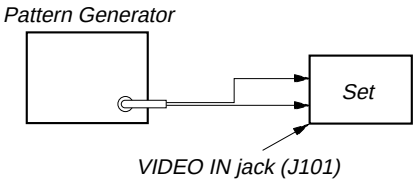
Adjustment Procedure:

(1) Connect a digital voltmeter to the CN102 pin ⑨ on YM-11 board.
(2) Set (or confirm) data: 01 to page: 1, address: 00. (Cancel D page protect)
(3) On page: D, address: 2E, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that the digital voltmeter reading satisfies the specification value.

Adjustment and Adjustment Parts: YM-11 board (see page 33)

LCD BLOCK

- View angle correction
  In making the LCD adjustment (except V.COM L adjustment, V.COM R adjustment, and white balance adjustment), first short the CN404 pin ① (GND) and pin ② (EAC OFF) on the RG-46 board (to turn off the view angle correction). After adjustment, disconnect a jumper wire for shortcircuit.
- For the LCD adjustment, connect a pattern generator as shown below. (For details, see page 17)



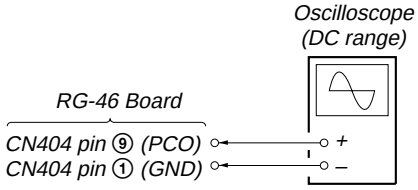
- Make the following adjustment in the given order.

[LCD TG PLL Frequency Adjustment]

Condition:

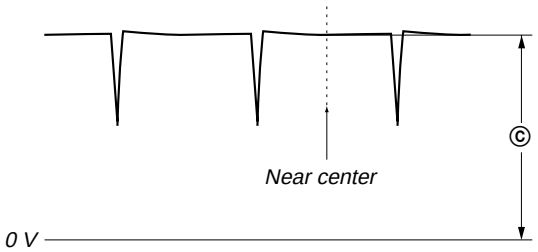
Input signal	Color bar signal
Measurement point	RG-46 board CN404 pin ⑨
Measuring equipment	Oscilloscope
Adjustment page	D
Adjustment address	2B
Specification value	2.85 ± 0.1 V

Connection:



Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode. (See page 22)
(2) Connect an oscilloscope to the CN404 pin ⑨ on the RG-46 board.
(3) Set (or confirm) data: 01 to page: 1, address: 00.
(Cancel D page protect)
(4) On page: D, address: 2E, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that the Ⓒ level of waveform on the oscilloscope satisfies the specification value.



Adjustment and Adjustment Parts: RG-46 board (see page 33)

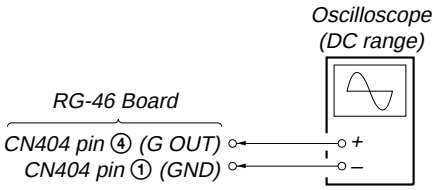
[Contrast Adjustment]

Note: The view angle correction must be turned off.

Condition:

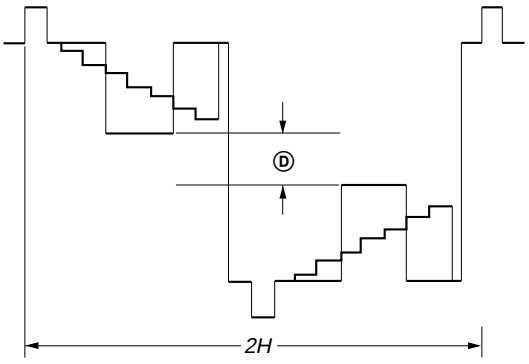
Input signal	Chroma signal, and color bar signal with burst signal turned off
Measurement point	RG-46 board CN404 pin ④
Measuring equipment	Oscilloscope
Adjustment page	D
Adjustment address	24
Specification value	3.0 ± 0.1 V

Connection:



Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)
(2) View angle correction OFF: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.
(3) Connect an oscilloscope to the CN404 pin ④ on the RG-46 board.
(4) Set (or confirm) data: 01 to page: 1, address: 00.
(Cancel D page protect)
(5) On page: D, address: 24, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that the Ⓓ level of waveform on the oscilloscope satisfies the specification value.



Adjustment and Adjustment Parts: RG-46 board (see page 33)

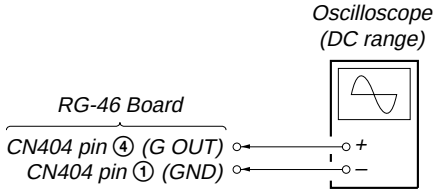
[RGB Brightness Adjustment]

Note: The view angle correction must be turned off.

Condition:

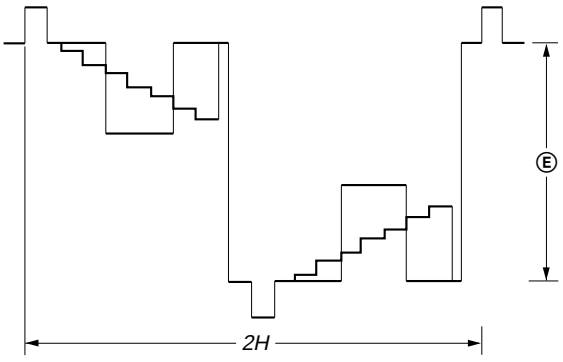
Input signal	Chroma signal, and color bar signal with burst signal turned off
Measurement point	RG-46 board CN404 pin ④
Measuring equipment	Oscilloscope
Adjustment page	D
Adjustment address	25
Specification value	7.4 ± 0.1 V

Connection:



Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)
(2) View angle correction OFF: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.
(3) Connect an oscilloscope to the CN404 pin ④ on the RG-46 board.
(4) Set (or confirm) data: 01 to page: 1, address: 00. (Cancel D page protect)
(5) On page: D, address: 25, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that the Ⓔ level of waveform on the oscilloscope satisfies the specification value.



Adjustment and Adjustment Parts: RG-46 board (see page 33)

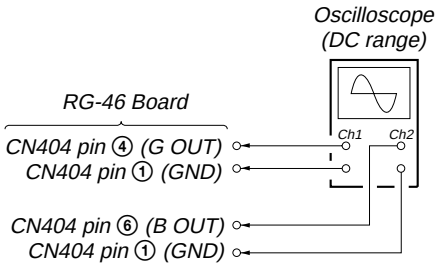
[B Brightness Adjustment]

Note: The view angle correction must be turned off.
Before this adjustment, the Contrast Adjustment must be finished.

Condition:

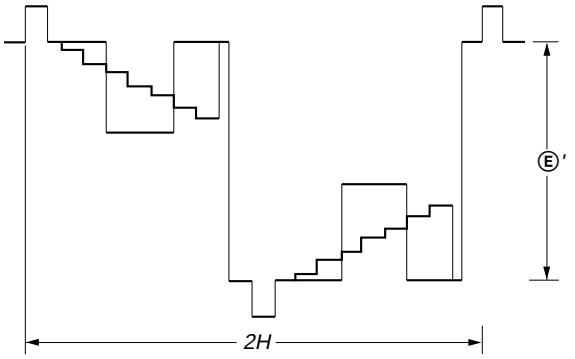
Input signal	Chroma signal, and color bar signal with burst signal turned off
Measurement point	RG-46 board CN404 pin ④ and pin ⑥
Measuring equipment	Oscilloscope
Adjustment page	D
Adjustment address	26
Specification value	± 0.05 V

Connection:



Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)
(2) View angle correction OFF: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.
(3) Connect CH1 of oscilloscope to the CN404 pin ④, and CH2 to the CN404 pin ⑥ on the RG-46 board.
(4) Set (or confirm) data: 01 to page: 1, address: 00. (Cancel D page protect)
(5) On page: D, address: 26, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that a difference between Ⓔ' level of waveform on the CH2 of oscilloscope and Ⓔ level (Ⓔ level of RGB Brightness Adjustment) on the CH1 satisfies the specification value.



Adjustment and Adjustment Parts: RG-46 board (see page 33)

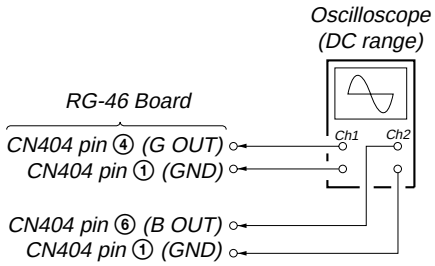
[B Gain Adjustment]

Note: The view angle correction must be turned off.
Before this adjustment, the Contrast Adjustment must be finished.

Condition:

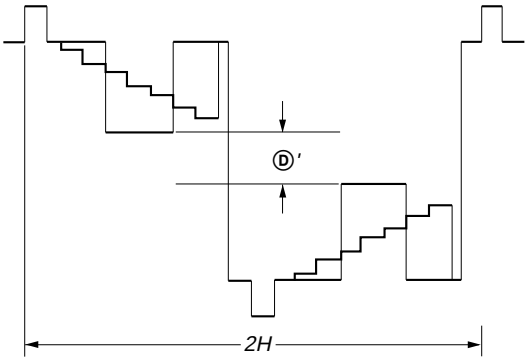
Input signal	Chroma signal, and color bar signal with burst signal turned off
Measurement point	RG-46 board CN404 pin ④ and pin ⑥
Measuring equipment	Oscilloscope
Adjustment page	D
Adjustment address	22
Specification value	± 0.05 V

Connection:



Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)
(2) View angle correction OFF: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.
(3) Connect CH1 of oscilloscope to the CN404 pin ④, and CH2 to the CN404 pin ⑥ on the RG-46 board.
(4) Set (or confirm) data: 01 to page: 1, address: 00.
(Cancel D page protect)
(5) On page: D, address: 22, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that a difference between Ⓓ' level of waveform on the CH2 of oscilloscope and Ⓓ evel (Ⓓ level of Contrast Adjust-ment) on the CH1 satisfies the specification value.



Adjustment and Adjustment Parts: RG-46 board (see page 33)

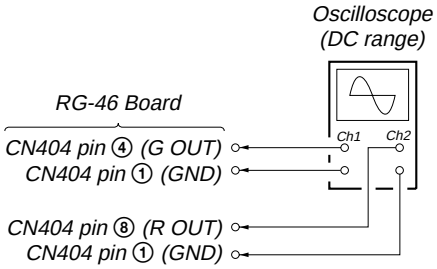
[R Brightness Adjustment]

Note: The view angle correction must be turned off.
Before this adjustment, the Contrast Adjustment must be finished.

Condition:

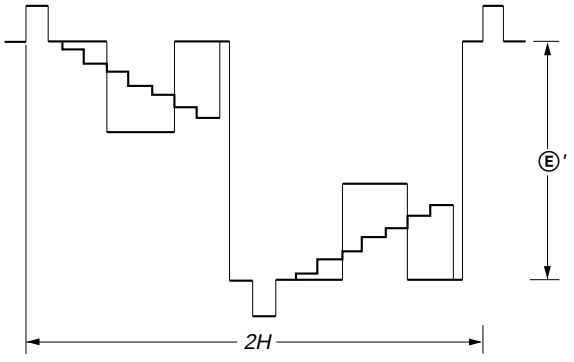
Input signal	Chroma signal, and color bar signal with burst signal turned off
Measurement point	RG-46 board CN404 pin ④ and pin ⑧
Measuring equipment	Oscilloscope
Adjustment page	D
Adjustment address	27
Specification value	± 0.05 V

Connection:



Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)
(2) View angle correction OFF: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.
(3) Connect CH1 of oscilloscope to the CN404 pin ④, and CH2 to the CN404 pin ⑧ on the RG-46 board.
(4) Set (or confirm) data: 01 to page: 1, address: 00.
(Cancel D page protect)
(5) On page: D, address: 27, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that a difference between Ⓔ' level of waveform on the CH2 of oscilloscope and Ⓔ level (Ⓔ level of RGB Brightness Adjustment) on the CH1 satisfies the specification value.



Adjustment and Adjustment Parts: RG-46 board (see page 33)

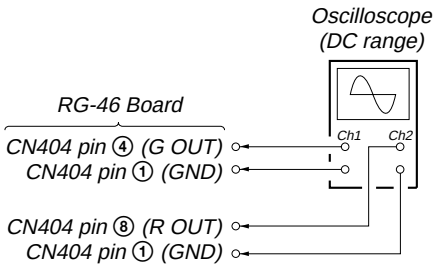
[R Gain Adjustment]

Note: The view angle correction must be turned off.
Before this adjustment, the Contrast Adjustment must be finished.

Condition:

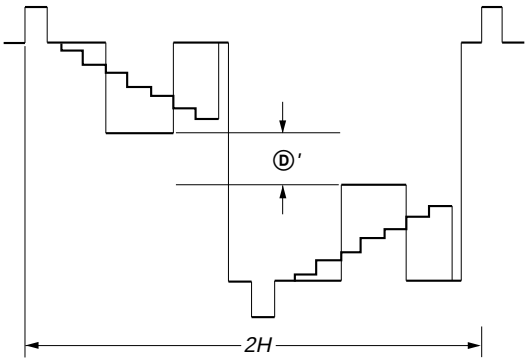
Input signal	Chroma signal, and color bar signal with burst signal turned off
Measurement point	RG-46 board CN404 pin ④ and pin ⑧
Measuring equipment	Oscilloscope
Adjustment page	D
Adjustment address	23
Specification value	± 0.05 V

Connection:



Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)
(2) View angle correction OFF: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.
(3) Connect CH1 of oscilloscope to the CN404 pin ④, and CH2 to the CN404 pin ⑧ on the RG-46 board.
(4) Set (or confirm) data: 01 to page: 1, address: 00.
(Cancel D page protect)
(5) On page: D, address: 23, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that a difference between Ⓓ' level of waveform on the CH2 of oscilloscope and Ⓓ level (Ⓓ level of Contrast Adjustment) on the CH1 satisfies the specification value.



Adjustment and Adjustment Parts: RG-46 board (see page 33)

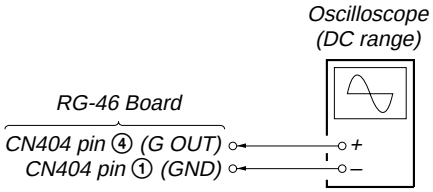
[Color Adjustment]

Note: The view angle correction must be turned off.

Condition:

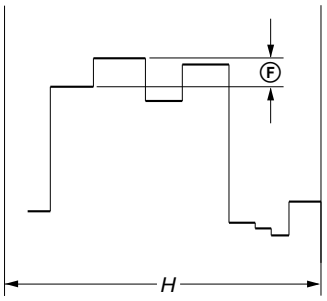
Input signal	Color bar signal
Measurement point	RG-46 board CN404 pin ④
Measuring equipment	Oscilloscope
Adjustment page	D
Adjustment address	31
Specification value	80 ± 15 mV

Connection:



Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)
(2) View angle correction OFF: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.
(3) Connect an oscilloscope to the CN404 pin ④ on the RG-46 board.
(4) Set (or confirm) data: 01 to page: 1, address: 00.
(Cancel D page protect)
(5) On page: D, address: 21, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that the Ⓕ level of waveform on the oscilloscope satisfies the specification value.



Adjustment and Adjustment Parts: RG-46 board (see page 33)

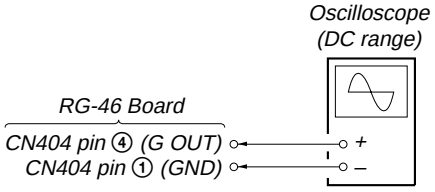
[Hue Adjustment]

Note: The view angle correction must be turned off.

Condition:

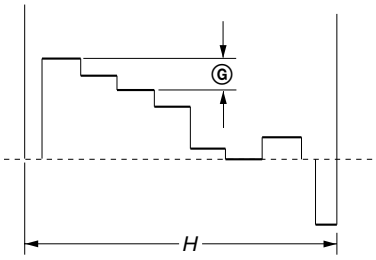
Input signal	Color bar signal
Measurement point	RG-46 board CN404 pin ④
Measuring equipment	Oscilloscope
Adjustment page	D
Adjustment address	30
Specification value	20 ± 15 mV

Connection:



Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)
(2) View angle correction OFF: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.
(3) Connect an oscilloscope to the CN404 pin ④ on the RG-46 board.
(4) Set (or confirm) data: 01 to page: 1, address: 00.
(Cancel D page protect)
(5) On page: D, address: 30, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that the Ⓖ level of waveform on the oscilloscope satisfies the specification value.



(6) After adjustment, check the Color Adjustment again.

Adjustment and Adjustment Parts: RG-46 board (see page 33)

[V.COM R]

• Make this adjustment through a visual check.

Note: The view angle correction must be turned off.
Before this adjustment, the Contrast Adjustment must be finished.

Condition:

Input signal	Monoscope signal
Measurement point	Right LCD screen
Measuring equipment	Visual check
Adjustment page	D
Adjustment address	28

Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)
(2) View angle correction OFF: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.
(3) Set (or confirm) data:01 to page: 1, address: 00.
(Cancel D page protect)
(4) On page: D, address: 28, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that horizontal streaks do not wobble on the display when looking into the right finder window.

Adjustment and Adjustment Parts: RG-46 board (see page 33)

[V.COM L]

• Make this adjustment through a visual check.

Note: The view angle correction must be turned off.
Before this adjustment, the Contrast Adjustment must be finished.

Condition:

Input signal	Monoscope signal
Measurement point	Left LCD screen
Measuring equipment	Visual check
Adjustment page	D
Adjustment address	29

Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)
(2) View angle correction ON: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.
(3) Set (or confirm) data: 01 to page: 1, address: 00.
(Cancel D page protect)
(4) On page: D, address: 29, change data with the PLAY and STOP buttons and press the PAUSE button to write data so that horizontal streaks do not wobble on the display when looking into the left finder window.

Adjustment and Adjustment Parts: RG-46 board (see page 33)

[White Balance Adjustment]

• Make this adjustment through a visual check.

Note: The view angle correction must be turned off.

Condition:

Input signal	Chroma signal, and color bar signal with burst signal turned off
Measurement point	LCD screen
Measuring equipment	Visual check
Adjustment page	D
Adjustment address	26, 27

Adjustment Procedure:

(1) Select EXT. VIDEO AUDIO mode, and picture and tone quality standard setting. (See page 22)

(2) View angle correction ON: Connect CN404 pin ② (EAC OFF) and pin ① (GND) on the RG-46 board.

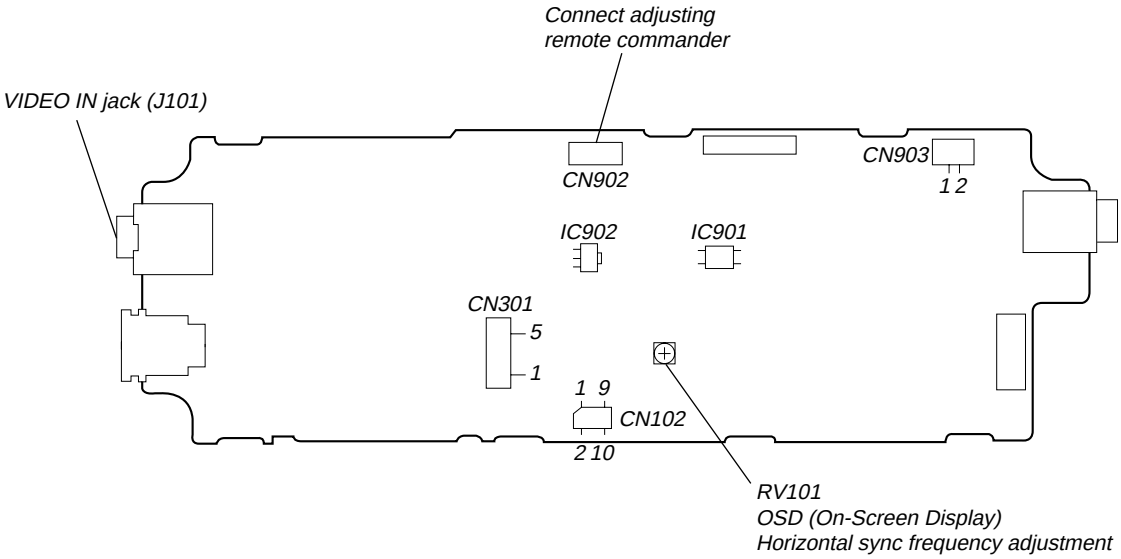
(3) Set (or confirm) data: 01 to page: 1, address: 00. (Cancel D page protect)

(4) Page: D, address: 26, 27
Change data at these two addresses with the PLAY and STOP buttons and press the PAUSE button to write data so that the display achromatic gray gradation (not colored in blue or red) while looking into the left and right finders.

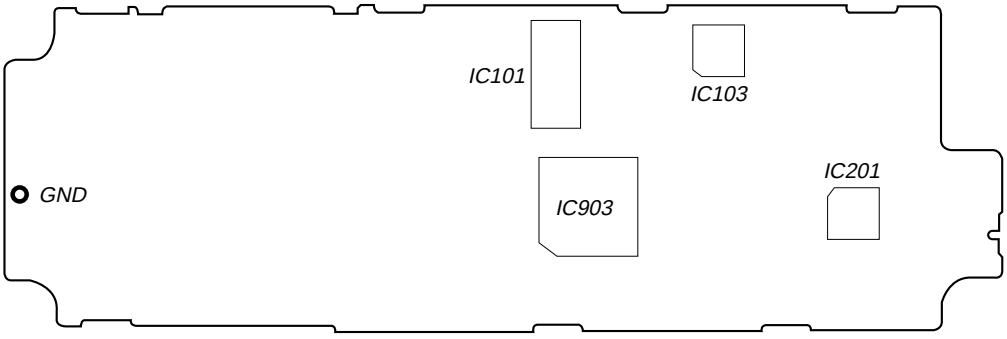
Adjustment and Adjustment Parts: RG-46 board (see page 33)

Adjustment and Adjustment Parts:

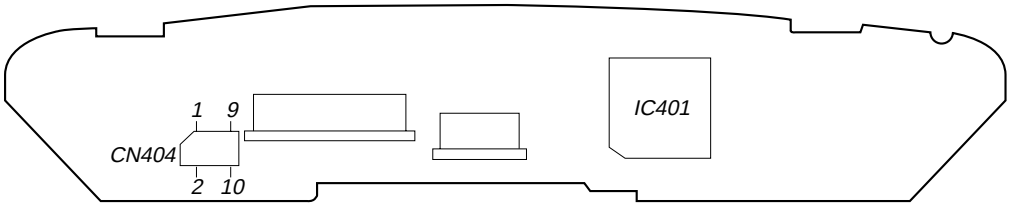
[YM-11 Board] (Side A)



[YM-11 Board] (Side B)



[RG-46 Board] (Side A)



SECTION 4
DIAGRAMS

4-1. IC PIN FUNCTION DESCRIPTION

• RG-46 BOARD IC401 CXA1854AR (LCD VIDEO SIGNAL PROCESSOR, LCD TIMING CONTROL)

Pin No.	Pin Name	I/O	Function
1	SYNCIN	I	Video signal (brightness signal) input to the sync separation circuit
2	YIN	I	Video signal (brightness signal) input terminal
3	AGCADJ	I	AGC level setting signal input from the D/A converter (IC402)
4	AGCTC	O	Connected to the time constant circuit for AGC
5	PICT	I	Brightness signal frequency characteristics setting signal input from the D/A converter (IC402)
6	GND1	—	Ground terminal (analog system)
7	MODE1	I	For selecting video mode (NTSC/PAL) "H": NTSC, "L" or "M" (middle setting) : PAL At "L", SPAL (chroma demodulation is executed internally), At "M" (middle setting), DPAL (external delay line is used for demodulation) (fixed at "H" in this set)
8	MODE2	I	For selecting composite/brightness color difference/brightness-chroma signal "H": composite signal input, "M" (middle setting): brightness color difference signal input, "L": brightness-chroma signal input (fixed at "L" in this set)
9	EXT-R	I	External digital input R signal Not used (fixed at "L")
10	EXT-G	I	External digital input G signal Not used (fixed at "L")
11	EXT-B	I	External digital input B signal Not used (fixed at "L")
12	RPD	O	PLL phase comparator output terminal
13	VSS	—	Ground terminal (digital system)
14	CKI	I	Master clock signal input from the D/A converter (IC402)
15	CKO	O	Master clock signal output terminal
16	TEST2	I	Input terminal for the test (Normally: open)
17	TEST1	I	
18	TEST0	I	
19	SLCK	I	Fixed at "L" in this set
20	VST2	O	Vertical start pulse output to the left LCD unit Output of vertical scanning start pulse signal added to gate driver
21	VST1	O	Vertical start pulse output to the right LCD unit Output of vertical scanning start pulse signal added to gate driver
22	VCK2	O	Vertical shift clock output to the left and right LCD units Output of vertical shift clock signal added to gate driver
23	VCK1	O	
24	EN	O	Enable pulse signal output to the left and right LCD units
25	CLR	O	Clear pulse signal output to the left and right LCD units
26	TEST4	O	Output terminal for the test (Normally: open)
27	HST1	O	Horizontal start pulse output to the left and right LCD units Output of horizontal sampling start pulse signal added to source driver
28	HCK2	O	Horizontal shift clock output to the left and right LCD units Output of horizontal shift clock signal added to source driver
29	HCK1	O	
30	HD	O	Horizontal drive pulse output terminal Not used (open)
31	VD	O	Vertical drive pulse output terminal
32	TEST5	I	Input terminal for the test (Normally: open)
33	VDD	—	Power supply terminal (+5V) (digital system)
34	RGT	I	For selecting scan mode "H": normal scan mode, "L": reverse scan mode (fixed at "L" in this set)

Pin No.	Pin Name	I/O	Function
35	$\overline{\text{X3D}}$	I	3D mode selection signal input from the D/A converter (IC402) "H": normal mode, "L": 3D mode
36	TEST7	I	Input terminal for the test (Normally: open)
37	TEST8	I	Input terminal for the test (Normally: open)
38	GND2	—	Ground terminal (analog system)
39	R OUT	O	R signal (primary color signal) output to the left and right LCD units
40	FB R	I	For DC voltage feedback of R signal (pin ㊴)
41	G OUT	O	G signal (primary color signal) output to the left and right LCD units
42	FB G	I	For DC voltage feedback of G signal (pin ㊶)
43	B OUT	O	B signal (primary color signal) output to the left and right LCD units
44	FB B	I	For DC voltage feedback of B signal (pin ㊸)
45	VCC2	—	Power supply terminal (+12V) (analog system)
46	BLKLIM	I	For setting the black peak limiter level of RGB output
47	VCC1	—	Power supply terminal (+5V) (analog system)
48	REG	O	Ground for a smoothing capacitor in internal constant-voltage power supply circuit
49	B-YIN	I	Input terminal of color difference demodulating circuit (in DPAL mode) or input of color difference signal (in SPAL mode) Open in NTSC mode
50	R-YIN	I	
51	COUT	O	Chroma signal output terminal (for 1H delay in PAL mode) Not used (open)
52	HUE/RST	I	Hue adjustment terminal (also used for reset input) Not used (open)
53	COLOR	I	Color adjustment terminal Not used (open)
54	XVXO	I	VXO crystal oscillator connection terminal (3.58 MHz) Not used (open)
55	R-BRT	I	R brightness adjustment signal input from the D/A converter (IC402)
56	B-BRT	I	B brightness adjustment signal input from the D/A converter (IC402)
57	RGB GAIN	I	For adjusting the amplitude gain of RGB output (fixed value is input in this set)
58	GAMMA2	I	For adjusting the voltage gain transition point gamma 2 (fixed value is input in this set)
59	GAMMA1	I	For adjusting the voltage gain transition point gamma 1 (fixed value is input in this set)
60	BRIGHT	I	RGB brightness adjustment signal input from the D/A converter (IC402)
61	CONTRAST	I	Contrast adjustment signal input from the D/A converter (IC402)
62	CIN	I	Video signal (chroma signal) input terminal Not used (open)
63	R-GAIN	I	R gain adjustment signal input from the D/A converter (IC402) (for fine adjustment of R signal contrast)
64	B-GAIN	I	B gain adjustment signal input from the D/A converter (IC402) (for fine adjustment of B signal contrast)

• **YM-11 BOARD IC101 μPD6454GT-627-E2 (CHARACTER GENERATOR)**

Pin No.	Pin Name	I/O	Function
1	CLK	I	Serial data transfer clock signal input from the system controller (IC903)
2	$\overline{CS}$	I	Chip select signal input from the system controller (IC903)
3	DATA	I	Serial data input from the system controller (IC903)
4	DVDD	—	Power supply terminal (+5V)
5	OSCOUT	O	Clock output terminal (for dot clock generate)
6	OSCIN	I	Clock input terminal (for dot clock generate)
7	$\overline{PCL}$	I	Reset signal input from the system controller (IC903) Memory clear at the power on (contents of IC are initialized at "L" → "H")
8	XOSO	O	Clock output terminal (14.318182 MHz) (for internal video signal generate)
9	XOSI	I	Clock input terminal (14.318182 MHz) (for internal video signal generate)
10	DGND	—	Ground terminal
11	VC	O	Character signal output terminal Not used (open)
12	VBLK	O	Blanking signal output for the cut video signals Not used (open)
13	SDE	O	Vertical sync detection signal output to the system controller (IC903) "L": vertical sync signal present
14	$\overline{VSYO}$	O	Vertical sync reference signal output to the system controller (IC903) External video signal mode: Composite sync signal separated synchronously is output Internal video signal mode: Vertical sync signal of internal video signal is output
15	$\overline{HSYO}$	O	Horizontal sync signal output from the APC circuit Not used (open)
16	AVDD	—	Power supply terminal (+5V)
17	VBSO	O	Output of composite video signal mixed with character signal
18	VCNT	I	For adjusting output level of composite video signal and brightness signal
19	VBSI	I	Composite video signal input terminal
20	SSIN	I	Composite video signal input for the synchronous separation
21	SSCR	I	For setting time constant circuit for synchronous separation
22	AFDI	I	Frequency error voltage input for the AFC VCO circuit
23	AGND	—	Ground terminal
24	AFDO	O	Frequency error voltage output for the AFC VCO circuit

• **YM-11 BOARD IC103 MC141628FUEB (Y/C SEPARATOR A/D, D/A CONVERTER)**

Pin No.	Pin Name	I/O	Function
1	VCOVDD	—	Power supply terminal (+5V) (for VCO)
2	BIAS	I	Bias current input terminal (for VCO)
3	OSCV	I	VCO control voltage input terminal Signal input from the PCOUT (pin ㉛)
4	DAGND	—	Ground terminal (for D/A converter)
5	Y OUT	O	Brightness signal output terminal
6	DAVCC	—	Power supply terminal (+5V) (for D/A converter)
7	C OUT	O	Chroma signal output terminal
8	DAREF	—	Reference voltage terminal (for D/A converter)
9	IBIAS	—	Current control terminal of bias circuit for D/A, A/D converters
10	TEST	I	Setting terminal for the test mode (Normally: fixed at "L")
11	$\overline{\text{PAL}}$/NTSC	I	Setting terminal for the video mode (NTSC/PAL) "L": PAL mode, "H": NTSC mode (fixed at "H" in this set)
12	BYPASS	I	Setting terminal for the bypass selection (Normally: fixed at "L")
13	PLLSEL	I	For setting whether clock is entered by color subcarrier input (built-in PLL operation) or by external clock input "L": built-in PLL operation (fixed at "L" in this set)
14	ADGND	—	Ground terminal (for A/D converter)
15	ADVDD	—	Power supply terminal (+5V) (for A/D converter)
16	CLC	I	For setting time constant for internal clamp circuit (Normally: fixed at "H")
17	CLOUT	O	Clamp voltage output terminal Not used (open)
18	V IN	I	Video signal input to the internal A/D converter
19	RBT	—	Bottom reference voltage for A/D converter Internal bottom reference voltage is supplied
20	RTP	—	Top reference voltage for A/D converter Internal top reference voltage is supplied
21 to 28	TB7 to TB0	I/O	In/out terminal for the digital interface Not used (fixed at "L")
29	CLK IN	I	Color subcarrier input from the CXA1950Q (IC201)
30	DVDD	—	Power supply terminal (+5V) (digital system)
31	PCOUT	O	Phase comparator output terminal
32	DGND	—	Ground terminal (digital system)

• **YM-11 BOARD IC201 CXA1950Q-T4 (RGB DECODER)**

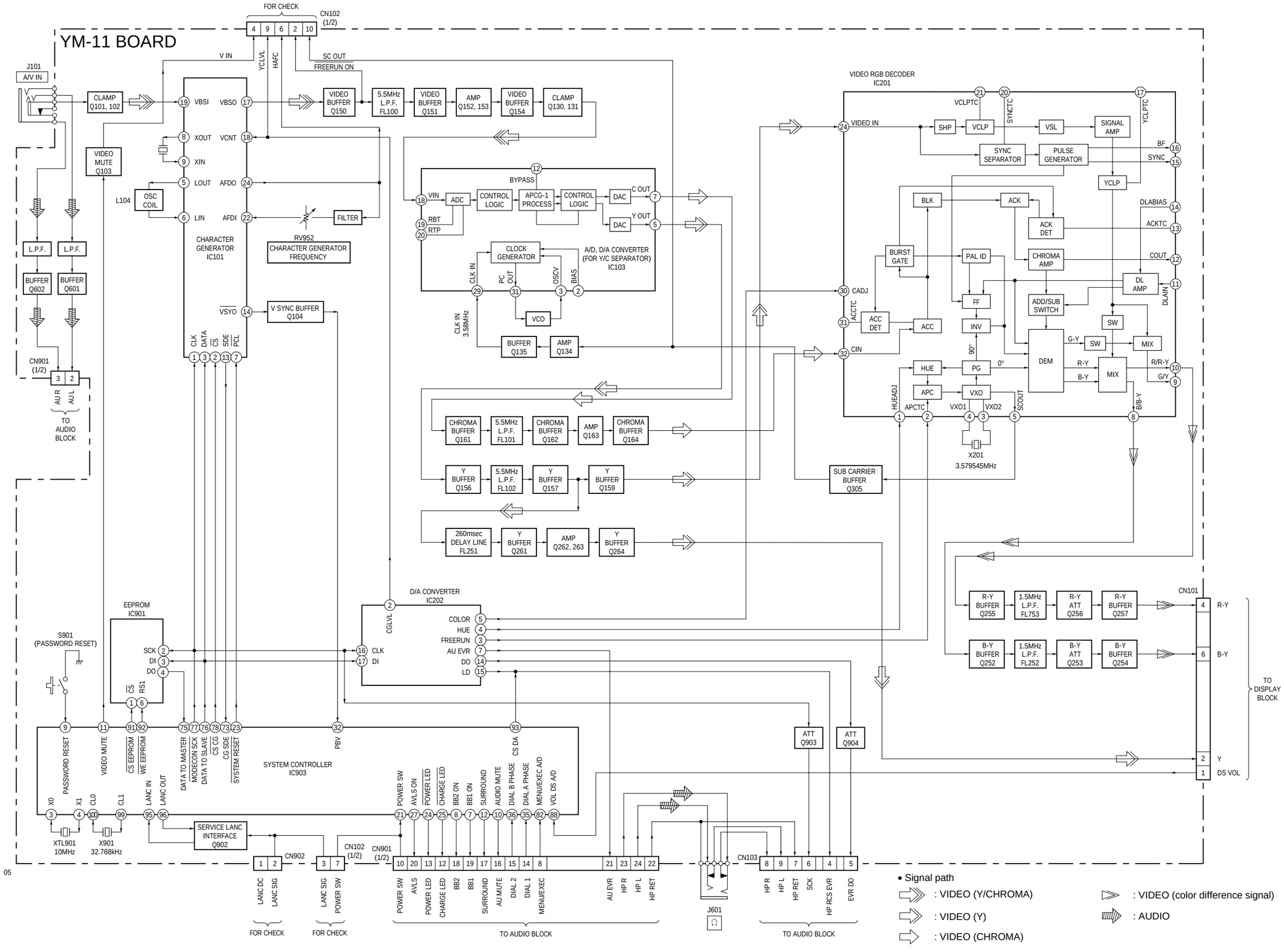
Pin No.	Pin Name	I/O	Function
1	HUE ADJ	I	HUE adjustment signal input from the D/A converter (IC202)
2	APCTC	I	APC (color synchronization) time constant and VXO free-run frequency adjustment signal input from the D/A converter (IC202)
3	VXO2	—	System clock connection terminal (3.579545 MHz)
4	VXO1	—	System clock connection terminal (3.579545 MHz)
5	SC OUT	O	Subcarrier output to the A/D, D/A converter (IC103) for Y/C separator
6	GND2	—	Ground terminal (chrominance system)
7	VCC2	—	Power supply terminal (+5V) (chrominance system)
8	B/B-Y	O	RGB B (blue) or RGB matrix color difference signal (B–Y) output terminal Output of the RGB matrix color difference signal (B–Y) in this set
9	G/Y	O	RGB G (green) or brightness signal output terminal Not used (open)
10	R/R-Y	O	RGB R (red) or RGB matrix color difference signal (R–Y) output terminal Output of the RGB matrix color difference signal (R–Y) in this set
11	DLAIN	I	Delay line amplifier input terminal Not used (fixed at "L")
12	COUT	O	Chroma signal output terminal Not used (open)
13	ACKTC	—	Connected to the time constant circuit for ACK (auto color killer)
14	DLABIAS	I	Setting terminal for the video mode (NTSC/PAL) "L": NTSC mode, "H": PAL mode (fixed at "L" in this set)
15	SYNC	O	Composite sync signal output terminal "L" active Not used (open)
16	BF	O	Burst flag signal output terminal "L" active Not used (open)
17	YCLPTC	—	Connected to the time constant circuit for pedestal clamp
18	ACKOUT	O	ACK (auto color killer) on/off check signal output terminal "L": ACK on (when APC is unlocked), "H": normal (when APC is locked) Not used (open)
19	ALTOUT	O	Alternate pulse output in PAL mode Not used (open)
20	SYNCTC	—	Connected to the time constant circuit to clamp sync chip for the sync separation
21	VCLPTC	—	Connected to the time constant circuit for pedestal clamp
22	VREG	O	Regulated power supply output terminal (+4.2V)
23	OUTSW	I	For output mode selection Changing over this terminal selects whether RGB signals or color difference signals are output from the ⑧ to ⑩ pins "L": color difference signal output, "H": RGB output (fixed at "L" in set)
24	VIDEO IN	I	Brightness signal input terminal
25	VCC1	—	Power supply terminal (+5V) (brightness signal system)
26	GND1	—	Ground terminal (brightness signal system)
27	SHPCTL	I	For adjusting the sharpness gain Fixed at center voltage in this set
28	SHPF0	I	For adjusting the frequency for sharpness filter
29	TPADJ	—	For setting the timing of internal pulses
30	CADJ	I	Chroma amplifier gain adjustment signal input from the D/A converter (IC202)
31	ACCTC	—	Connected to the time constant circuit for ACC (auto color control)
32	CIN	I	Chroma signal input terminal

• **YM-11 BOARD IC903 MB89082PFV-G-117-BND (SYSTEM CONTROLLER)**

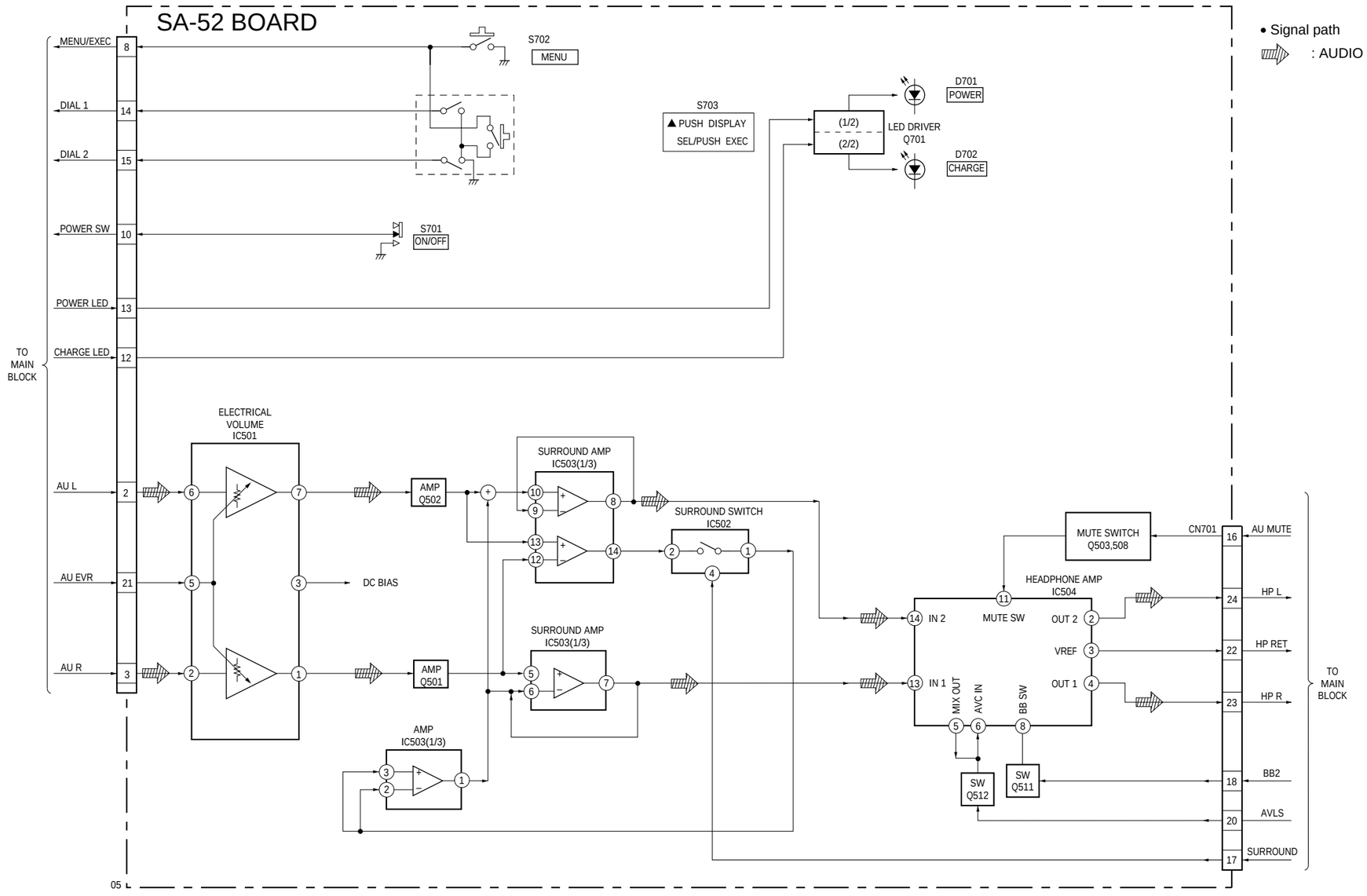
Pin No.	Pin Name	I/O	Function
1	TEST MODE 0	I	Setting terminal for the test mode (Normally: fixed at "L")
2	TEST MODE 1	I	Setting terminal for the test mode (Normally: fixed at "L")
3	X0	I	Main system clock input terminal (10 MHz)
4	X1	O	Main system clock output terminal (10 MHz)
5	VSS	—	Ground terminal
6	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator (IC904) "L"" reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
7	BB1 ON	O	Bass boost control signal output terminal "H": bass boost on Not used
8	BB2 ON	O	Bass boost control signal output to the headphone amplifier (IC504) "H": bass boost on
9	PASSWORD RESET	I	Pass word reset switch (S901) input terminal Password is erased when "L" is input
10	AUDIO MUTE	O	Audio line muting control signal output terminal "H": muting on
11	VIDEO MUTE	O	Video muting control signal output terminal "H": muting on
12	SURROUND	O	Surround control signal output terminal "H": surround on
13	3D MODE	O	3D mode selection signal output terminal "L": 3D mode, "H": normal mode Not used (open)
14	$\overline{\text{LANC POWER ON}}$	I	Power supply control input of the LANC "L": power on Not used (fixed at "H")
15	BATT CONT	O	Output of main power control when rechargeable battery is used "L": use of DC adapter, "H": use of rechargeable battery
16	BATT CHK	O	Output of voltage check on/off control in charge mode "H": voltage check on
17	DD POWER	O	Power on/off control signal output to the DC/DC converter (IC301) "H": power on
18	P13/E113	—	Not used (open)
19	$\overline{\text{BATT IN SW}}$	I	Battery pack detection switch input terminal "L": battery pack present
20	P15	—	Not used (open)
21	POWER SW	I	Power switch (S701) input terminal (toggle input) "L" is input when power is turned on/off
22	P17	—	Not used (open)
23	$\overline{\text{SYSTEM RESET}}$	O	Reset signal output to the character generator (IC101) "L": reset
24	$\overline{\text{POWER LED}}$	O	LED drive signal output of the POWER indicator (D701) "H": LED on
25	$\overline{\text{CHARGE LED}}$	O	LED drive signal output of the CHARGE indicator (D702) "H": LED on
26	CLK 10M/$\overline{\text{32K}}$	I	Selection input of the clock frequency "L": 32 kHz, "H": 10 MHz Not used (open)
27	AVLS ON	O	AVLS (Automatic Volume Limiter System) control signal output to the headphone amplifier (IC504) "H": AVLS on
28	BL ON	O	Back light unit on/off control signal output terminal "H": back light on
29	P26	—	Not used (open)
30	P27/RMCI	—	Not used (open)
31	BATT IN	I	Power failure detection input terminal
32	PBV	I	Vertical sync reference signal input from the character generator (IC101)
33	DC IN MON	I	DC IN detection input terminal "L": DC present
34	BATT IN MON	I	Dry battery pack detection input terminal "H" is input when battery pack is set
35	DIAL A PHASE	I	Rotary encoder dial pulse input of the screen display/select/enter jog dial (S703) (A phase input)
36	DIAL B PHASE	I	Rotary encoder dial pulse input of the screen display/select/enter jog dial (S703) (B phase input)
37	LED015	O	LED drive signal output terminal Not used (open)
38	$\overline{\text{CS CAM}}$	O	Chip select signal output terminal Not used (open)

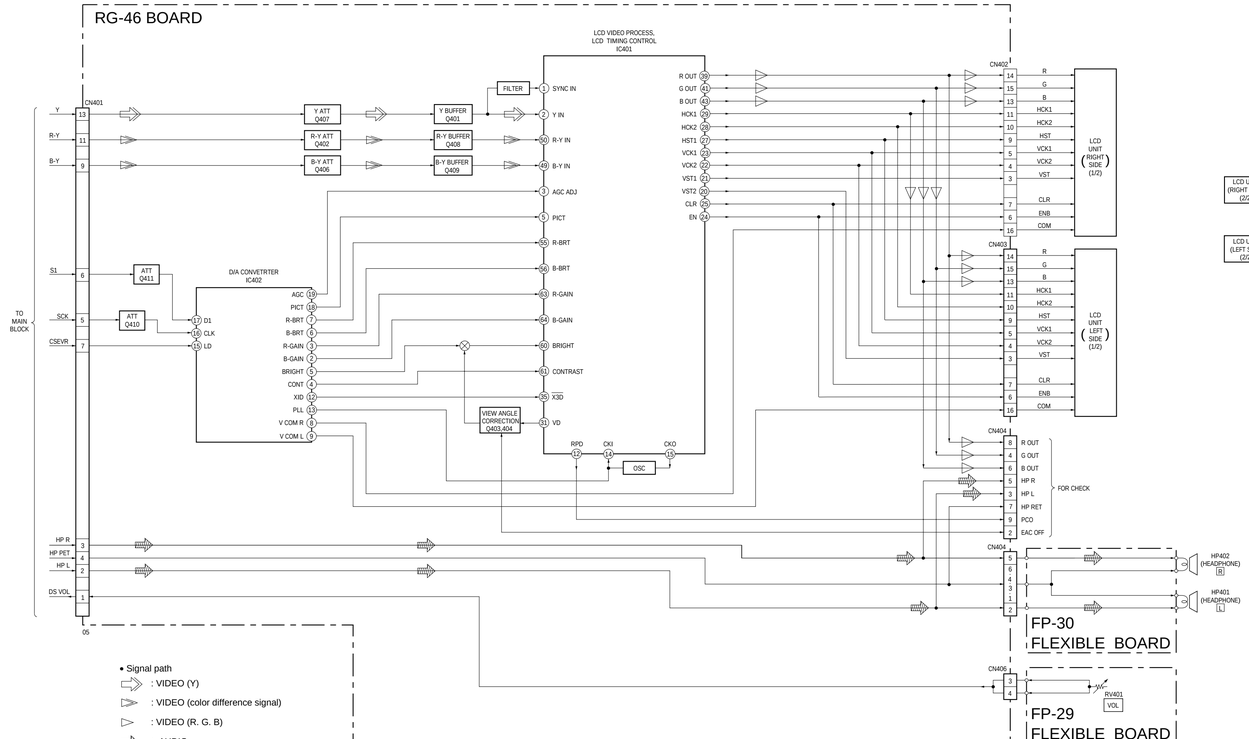
Pin No.	Pin Name	I/O	Function
39 to 44	LED016 to LED021	O	LED drive signal output terminal Not used (open)
45	RMC SEL	I	Not used (fixed at "L")
46	$\overline{\text{RMC SEL}}$	—	Not used (open)
47	VCC	—	Power supply terminal (+5V)
48 to 55	SEG15 to SEG08	O	LCD segment drive signal output terminal Not used (open)
56	VSS	—	Ground terminal
57 to 64	SEG07 to SEG00	O	LCD segment drive signal output terminal Not used (open)
65 to 68	V3 to V0	I	Bias voltage input for the LCD drive Not used
69 to 72	COM0 to COM3	O	LCD common drive signal output terminal Not used (open)
73	CG SDE	I	Input of check signal whether vertical sync signal is present or not from character generator (IC101) "L": vertical sync signal is present
74	DD CHARGE	O	Charge mode on/off control signal output to the DC/DC converter (IC301)
75	DATA TO MASTER	I	Serial data input from the EEPROM (IC901)
76	DATA TO SLAVE	O	Serial data output to the character generator (IC101), D/A converter (IC202) and EEPROM (IC901)
77	$\overline{\text{MODECON SCK}}$	O	Serial data transfer clock signal output to the character generator (IC101), D/A converter (IC202, 402) and EEPROM (IC901)
78	$\overline{\text{CS CG}}$	O	Chip select signal output to the character generator (IC101)
79	DD MAIN	O	Main power supply control signal output to the DC/DC converter (IC301)
80	SHUTTER	O	Rectangle waveform (125 Hz) output for the shutter Not used (open)
81	AVSS	—	Ground terminal (for A/D input)
82	MENU/EXEC A/D	I	S702 and S703 keys input on the SA-52 board
83	BATT SIG	I	Not used
84	CHARGE A/D IN	I	Input of battery voltage detection in charge mode (A/D input)
85	BATT SENCE	I	Input of battery capacity detection when rechargeable battery is used (A/D input)
86	DC IN A/D	I	Input of voltage detection when DC adapter is used (A/D input)
87	VOL I/F A/D	—	Not used (open)
88	VOL DS A/D	I	Volume control input terminal (A/D input)
89	P97/AN07	—	Not used (open)
90	AVCC	—	Power supply terminal (+5V) (for A/D input)
91	$\overline{\text{CS EEPROM}}$	O	Chip select signal output to the EEPROM (IC902)
92	$\overline{\text{WE EEPROM}}$	O	Data write enable signal output to the EEPROM (IC902)
93	CS DA	O	Chip select signal output to the D/A converter (IC202, 402)
94	PA3/AN11	—	Not used (open)
95	LANC IN	I	LANC serial data input terminal (for test)
96	LANC OUT	O	LANC serial data output terminal (for test)
97	BUZZER	O	Buzzer sound output terminal Not used (open)
98	BACK UP VCC	—	Power supply terminal (+5V)
99	CL1	O	Sub system clock output terminal (32.768 kHz)
100	CL0	I	Sub system clock input terminal (32.768 kHz)

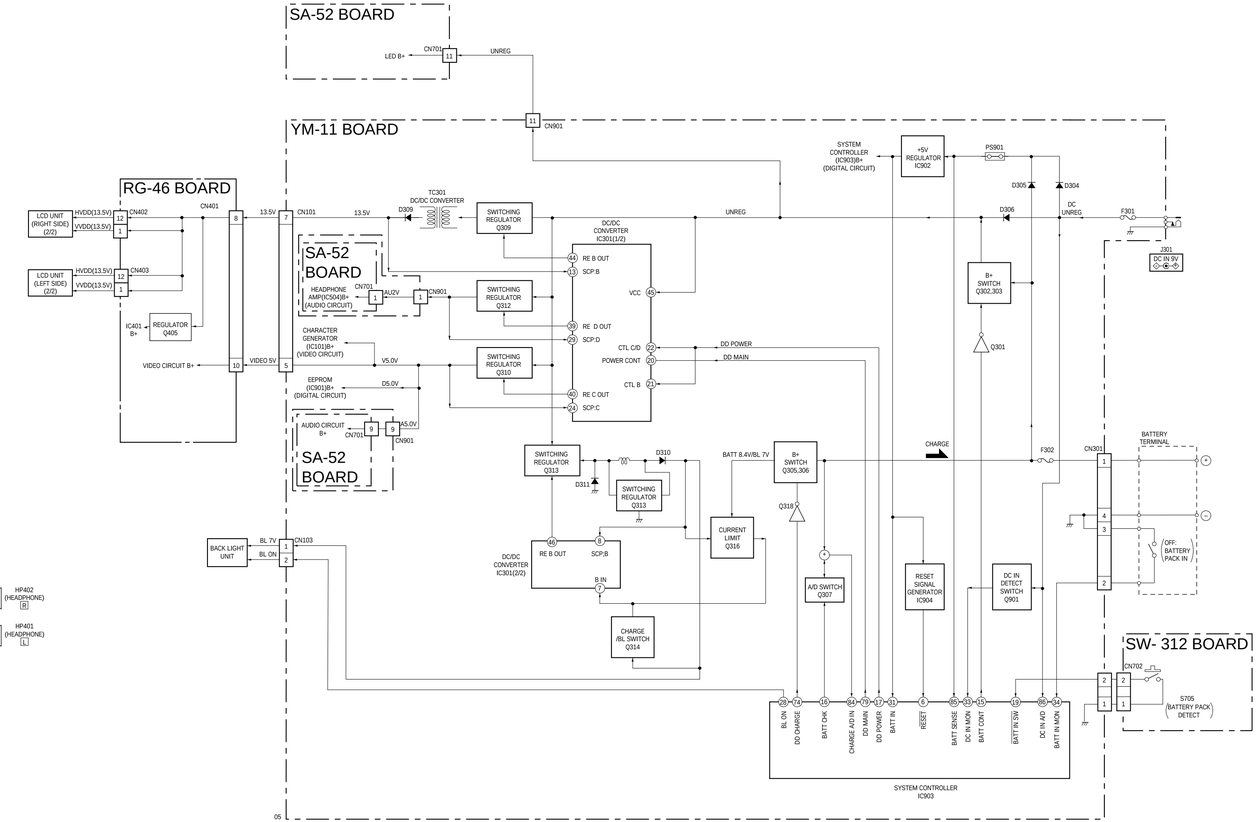
4-2. BLOCK DIAGRAM – MAIN Section –



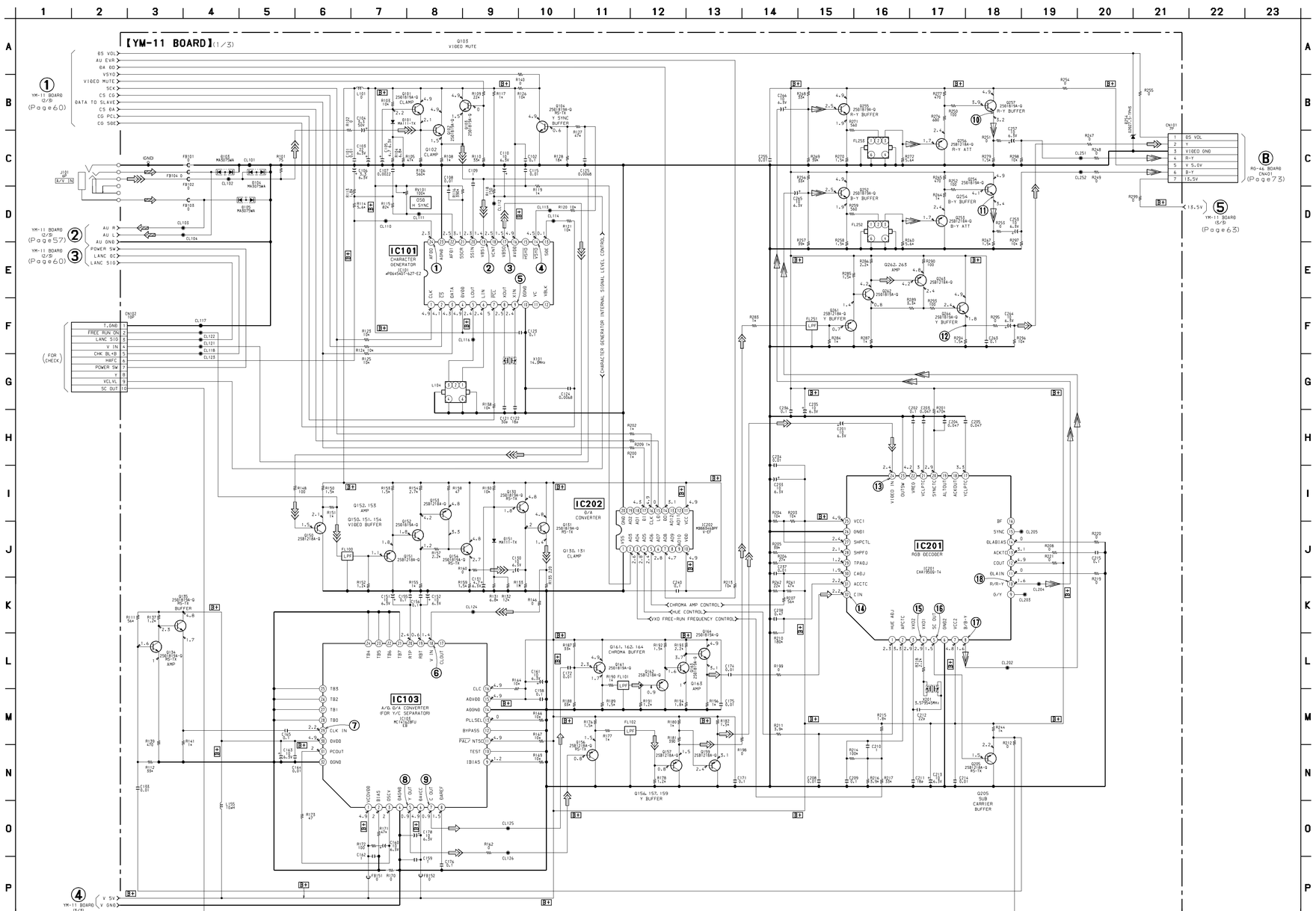
4-3. BLOCK DIAGRAM – AUDIO/KEY CONTROL Section –




RG-46 BOARD
LCD VIDEO PROCESS, LCD TIMING CONTROL IC401
CN401
Y
R-Y
B-Y
S1
SCK
CSEVR
TO MAIN BLOCK
Y ATT Q407
R-Y ATT Q402
B-Y ATT Q406
ATT Q411
ATT Q410
Y BUFFER Q401
R-Y BUFFER Q408
B-Y BUFFER Q409
FILTER
D/A CONVETRTER IC402
D1
CLK
LD
AGC
PICT
R-BRT
B-BRT
R-GAIN
B-GAIN
BRIGHT
CONT
XID
PLL
V COM R
V COM L
VIEW ANGLE CORRECTION Q403,404
SYNC IN
Y IN
R-Y IN
B-Y IN
AGC ADJ
PICT
R-BRT
B-BRT
R-GAIN
B-GAIN
BRIGHT
CONTRAST
XSD
VD
RPD
CKI
CKO
OSC
R OUT
G OUT
B OUT
HCK1
HCK2
HST
VCK1
VCK2
VST1
VST2
CLR
EN
CN402
CN403
R
G
B
HCK1
HCK2
HST
VCK1
VCK2
VST
CLR
ENB
COM
LCD UNIT RIGHT SIDE (1/2)
LCD UNIT LEFT SIDE (1/2)
CN404
R OUT
G OUT
B OUT
HP R
HP L
HP RET
PCO
EAC OFF
FOR CHECK
HP R
HP PET
HP L
DS VOL
HP402 (HEADPHONE) R
HP401 (HEADPHONE) L
FP-30 FLEXIBLE BOARD
CN406
RV401 VOL
FP-29 FLEXIBLE BOARD
05
• Signal path
: VIDEO (Y)
: VIDEO (color difference signal)
: VIDEO (R. G. B)
: AUDIO


SA-52 BOARD
LED B+
CN701
UNREG
YM-11 BOARD
CN901
RG-46 BOARD
LCD UNIT (RIGHT SIDE) (2/2)
LCD UNIT (LEFT SIDE) (2/2)
HVDD(13.5V)
VVDD(13.5V)
CN402
CN403
CN401
IC401 B+
REGULATOR Q405
VIDEO CIRCUIT B+
VIDEO 5V
CN101
13.5V
TC301 DC/DC CONVERTER
D309
SWITCHING REGULATOR Q309
SA-52 BOARD
HEADPHONE AMP(CS04)B+ (AUDIO CIRCUIT)
AU2V
SWITCHING REGULATOR Q312
CHARACTER GENERATOR (IC101)B+ (VIDEO CIRCUIT)
V5.0V
SWITCHING REGULATOR Q310
EEPROM (IC901)B+ (DIGITAL CIRCUIT)
D5.0V
AUDIO CIRCUIT B+
A5.0V
CN903
DC/DC CONVERTER IC301(1/2)
RE B OUT
SCP:B
RE D OUT
SCP:D
RE C OUT
SCP:C
VCC
CTL C/D
POWER CONT
CTL B
DD POWER
DD MAIN
SYSTEM CONTROLLER (IC903)B+ (DIGITAL CIRCUIT)
+5V REGULATOR IC902
PS901
D305
D304
D306
DC UNREG
F301
J301
DC IN 9V
B+ SWITCH Q302,303
Q301
SWITCHING REGULATOR Q313
D310
D311
SWITCHING REGULATOR Q313
BATT 8.4V/BL 7V
B+ SWITCH Q305,306
Q316
CHARGE
F302
CN301
BATTERY TERMINAL
OFF: BATTERY PACK IN
CURRENT LIMIT Q316
BACK LIGHT UNIT
BL 7V
BL ON
CN103
DC/DC CONVERTER IC301(2/2)
RE B OUT
SCP:B
B IN
CHARGE /BL SWITCH Q314
A/D SWITCH Q907
RESET SIGNAL GENERATOR IC904
DC IN DETECT SWITCH Q901
SW- 312 BOARD
CN702
S705 (BATTERY PACK) DETECT
BL ON
DD CHARGE
BATT CHK
CHARGE A/D IN
DD MAIN
DD POWER
BATT IN
RESET
BATT SENSE
DC IN MON
BATT CONT
BATT IN SW
DC IN A/D
BATT IN MON
SYSTEM CONTROLLER IC903
05

4-7. SCHEMATIC DIAGRAM – YM-11 Board (1/3) – • See pages 82 and 83 for Waveforms. • See pages 77 to 80 for IC Block Diagrams.

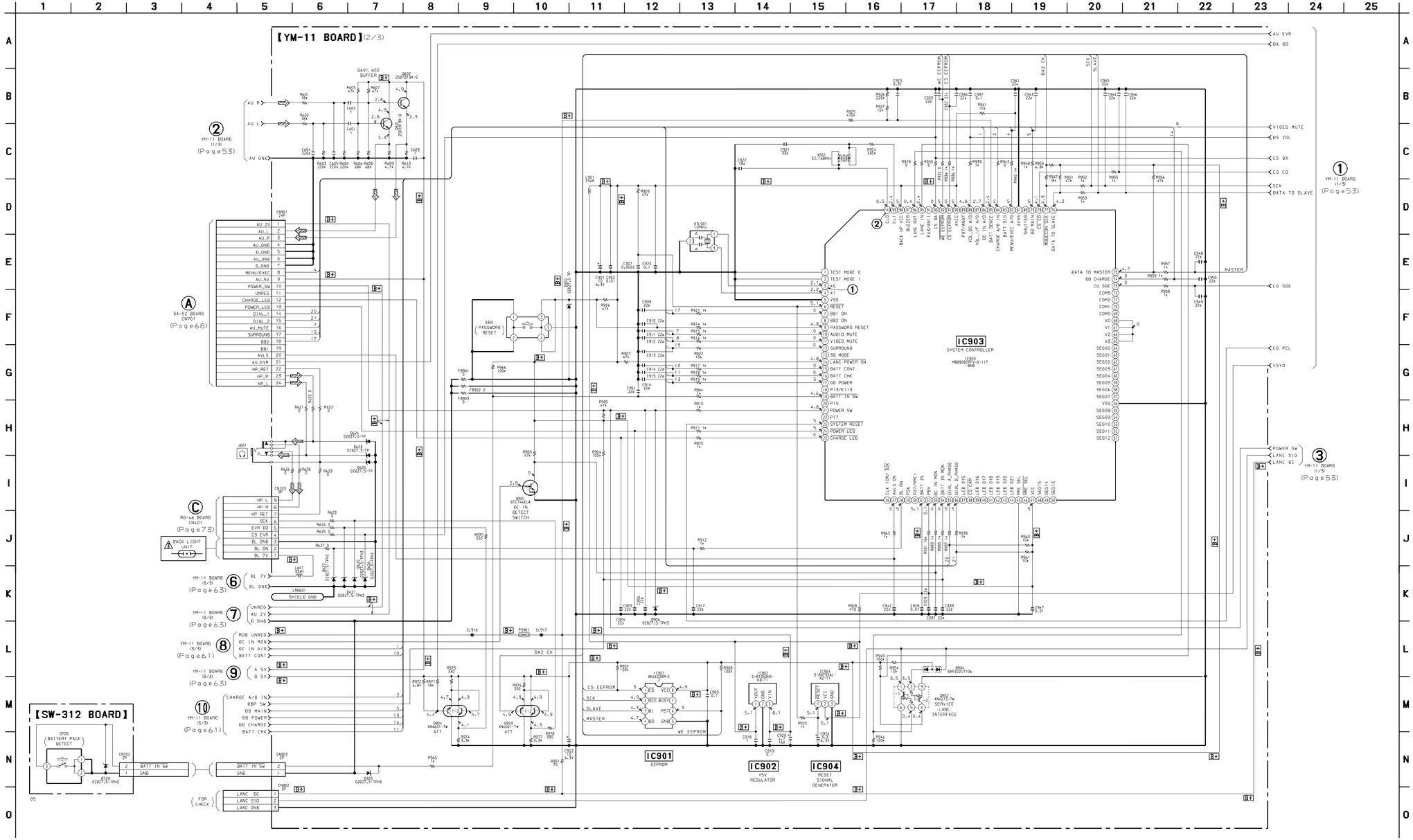


Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation.
- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 9 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground in color-bar signal input.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⇨ : VIDEO (Y/CHROMA)
  - ⇨ : VIDEO (Y)
  - ⇨ : VIDEO (CHROMA)
  - ⇨ : VIDEO (color difference signal)
  - ⇨ : AUDIO

4-8. SCHEMATIC DIAGRAM – YM-11 Board (2/3)/SW-312 Board –

• See page 83 for Waveforms. • See pages 77 to 80 for IC Block Diagrams.



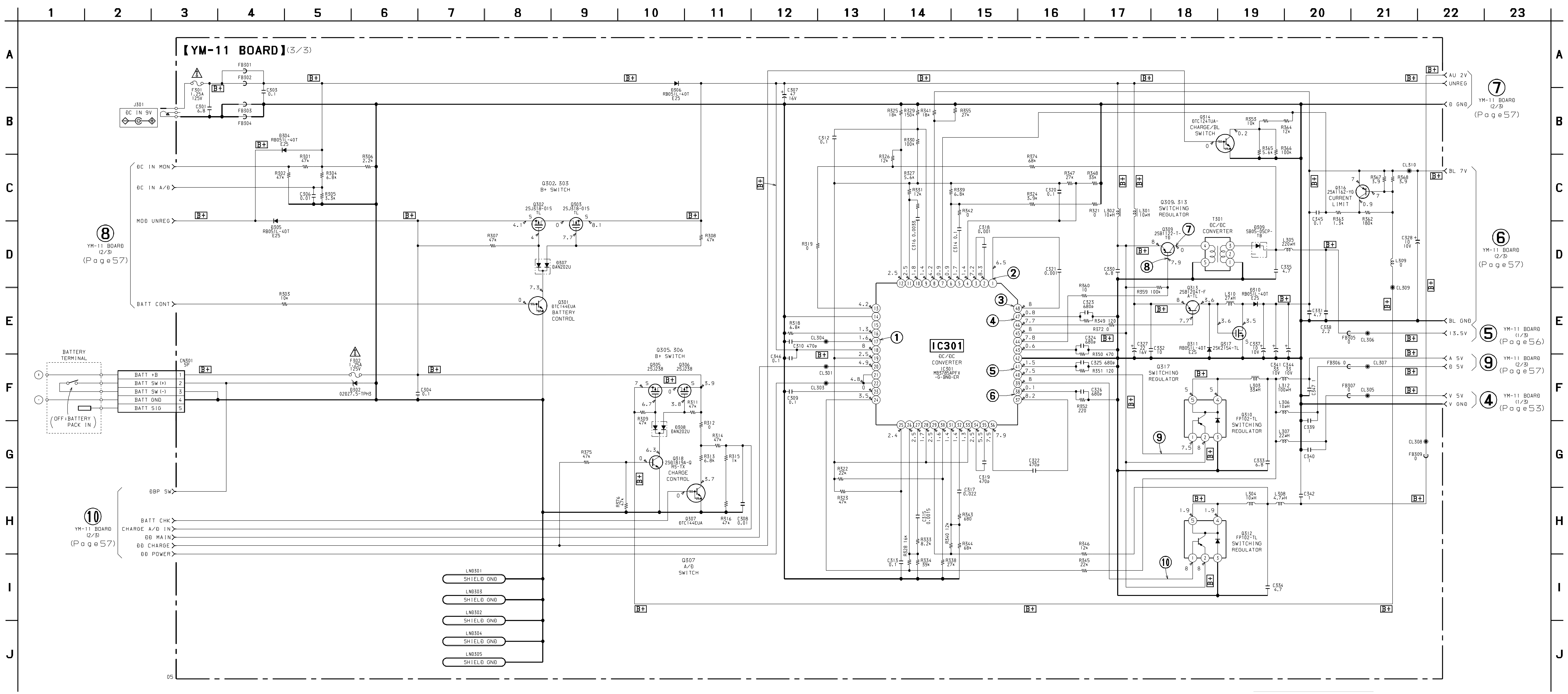
Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¹/₄ W or less unless otherwise specified.
- ⚠ : internal component.
- ▭ : panel designation.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line.
- Power voltage is dc 9 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground in color-bar signal input.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇨ : AUDIO

4-9. SCHEMATIC DIAGRAM – YM-11 Board (3/3) – • See pages 83 and 84 for Waveforms. • See pages 77 to 80 for IC Block Diagrams.



【YM-11 BOARD】(3/3)
J301 DC IN 9V
F301 1.25A 125V
FB301
FB302
FB303
FB304
D304 RB051L-40T E25
D305 RB051L-40T E25
D306 RB051L-40T E25
DC IN MON
DC IN A/D
MOD UNREG
BATT CONT
YM-11 BOARD (2/3) (Page57)
Q302, 303 B+ SWITCH
Q302 2SJ318-01S TL
Q303 2SJ318-01S TL
D307 DAN202U
Q301 DTC144EUA BATTERY CONTROL
BATTERY TERMINAL
(OFF:BATTERY PACK IN)
CN301 5P
BATT +B
BATT SW(+)
BATT SW(-)
BATT GND
BATT SIG
F302 1.25A 125V
D302 02DZ7.5-TPH3
Q305, 306 B+ SWITCH
Q305 2SJ238
Q306 2SJ238
D308 DAN202U
Q318 2SD1819A-Q RS-TX CHARGE CONTROL
Q307 DTC144EUA
Q307 A/D SWITCH
DBP SW
BATT CHK
CHARGE A/D IN
DD MAIN
DD CHARGE
DD POWER
LND301 SHIELD GND
LND303 SHIELD GND
LND302 SHIELD GND
LND304 SHIELD GND
LND305 SHIELD GND
IC301 DC/DC CONVERTER IC301 MB3785APFV -G-BND-ER
Q314 DTC124TUA- CHARGE/BL SWITCH
Q309, 313 SWITCHING REGULATOR
Q309 2SB1122-T-TD
T301 DC/DC CONVERTER
D309 SB05-05CP-TB
Q313 2SB1204T-F A-TL
D310 RB051L-40T E25
D311 RB051L-40T E25
Q317 2SK2154-TL
Q317 SWITCHING REGULATOR
Q310 FP102-TL SWITCHING REGULATOR
Q312 FP102-TL SWITCHING REGULATOR
Q316 2SA1162-YG CURRENT LIMIT
AU 2V
UNREG
D GND
YM-11 BOARD (2/3) (Page57)
BL 7V
YM-11 BOARD (2/3) (Page57)
BL GND
13.5V
YM-11 BOARD (1/3) (Page56)
A 5V
D 5V
YM-11 BOARD (2/3) (Page57)
V 5V
V GND
YM-11 BOARD (1/3) (Page53)

Note on Schematic Diagram:

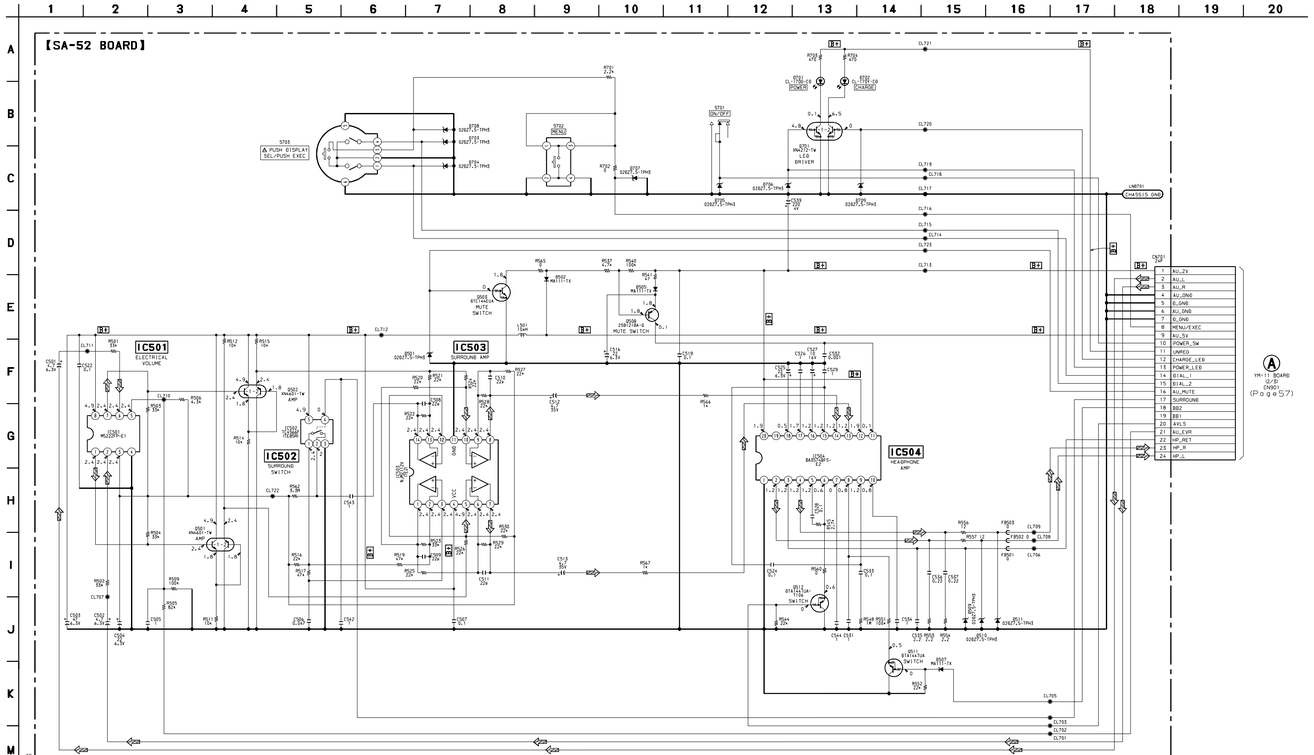
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- Power voltage is dc 9 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground in color-bar signal input.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

4-10. SCHEMATIC DIAGRAM – SA-52 Board –

• See page 77 for IC Block Diagrams.

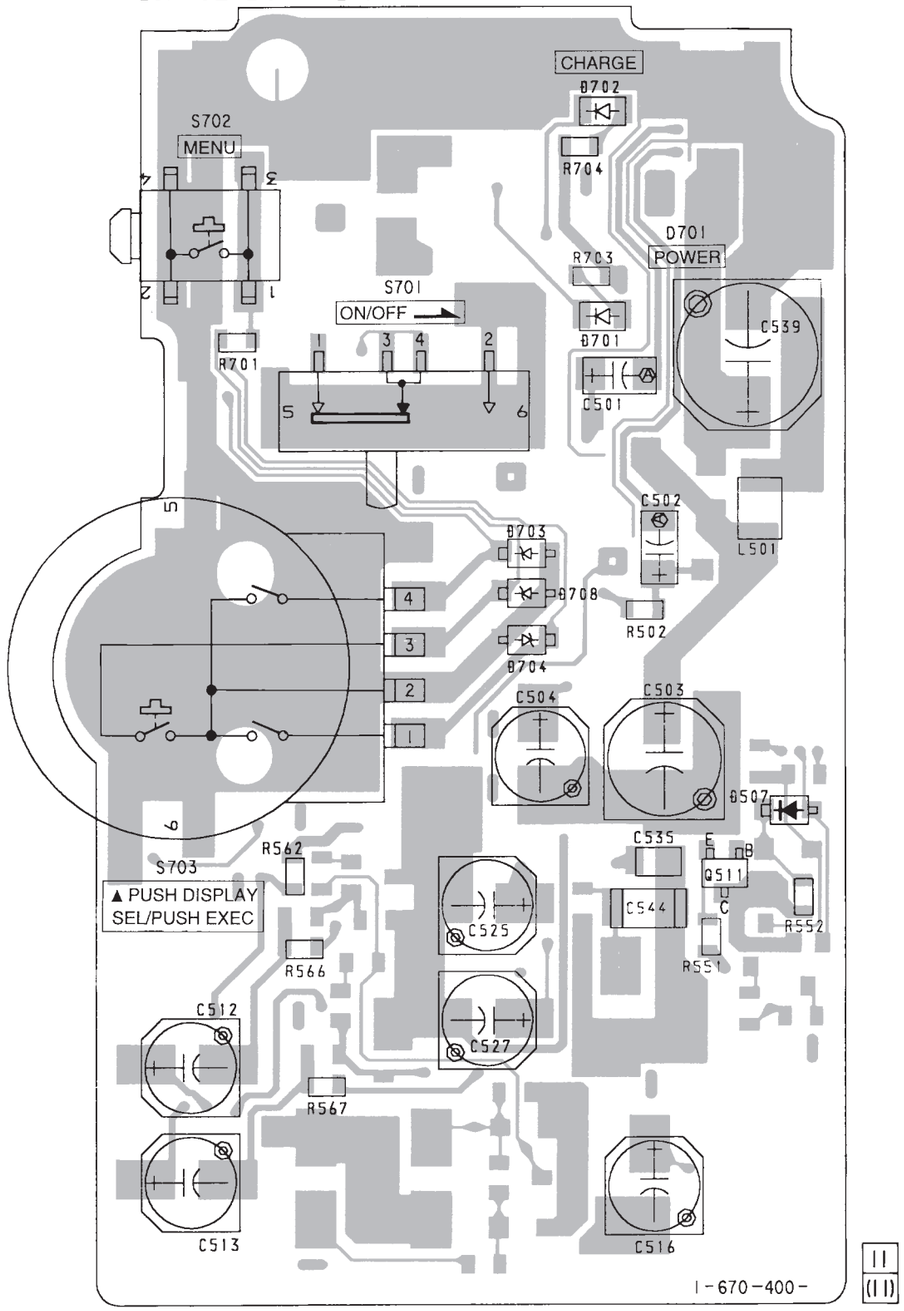


Note on Schematic Diagram:

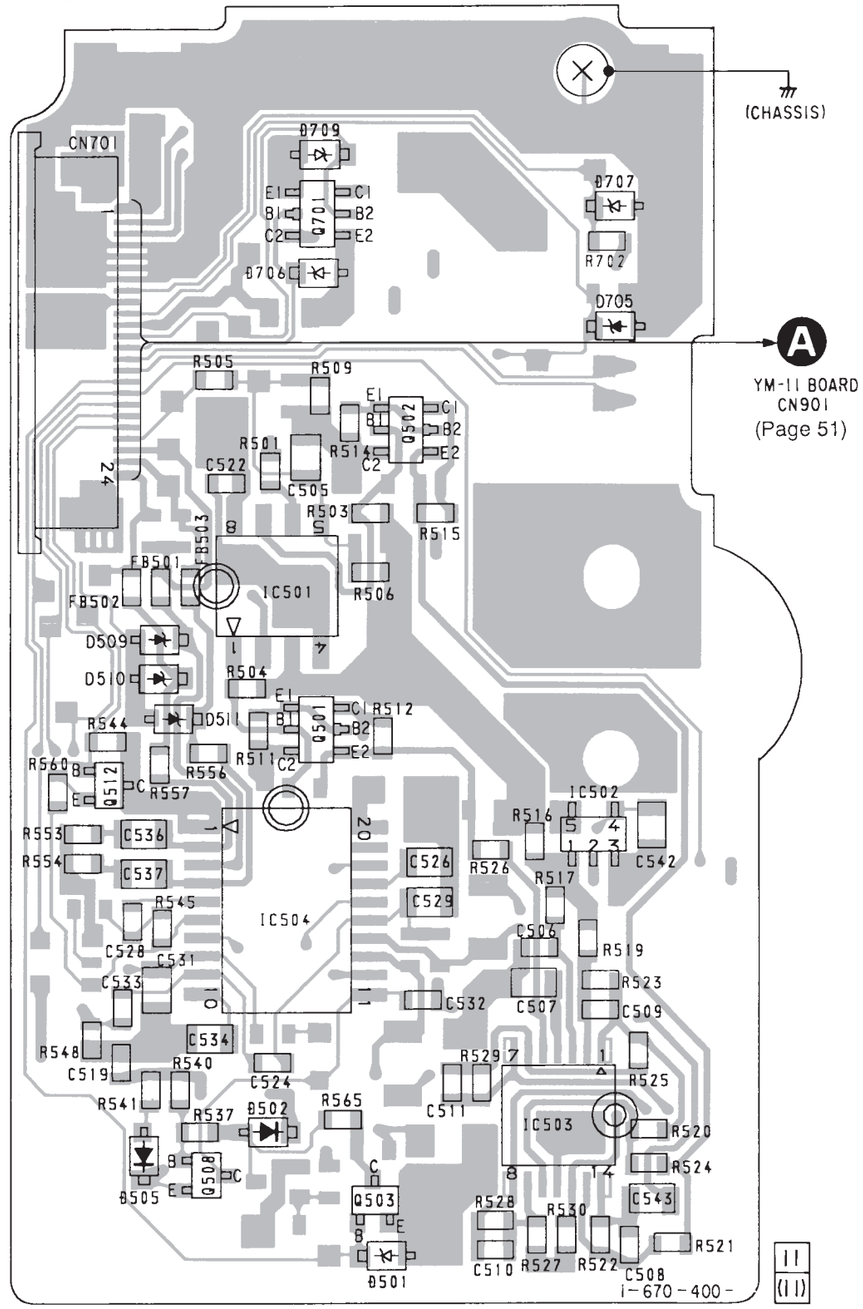
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- [ ] : panel designation.
- [B+] : B+ Line.
- Power voltage is dc 9 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground in color-bar signal input.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : AUDIO

4-11. PRINTED WIRING BOARD – SA-52 Board –

【SA-52 BOARD】(COMPONENT SIDE)



【SA-52 BOARD】(CONDUCTOR SIDE)



• **Semiconductor Location**

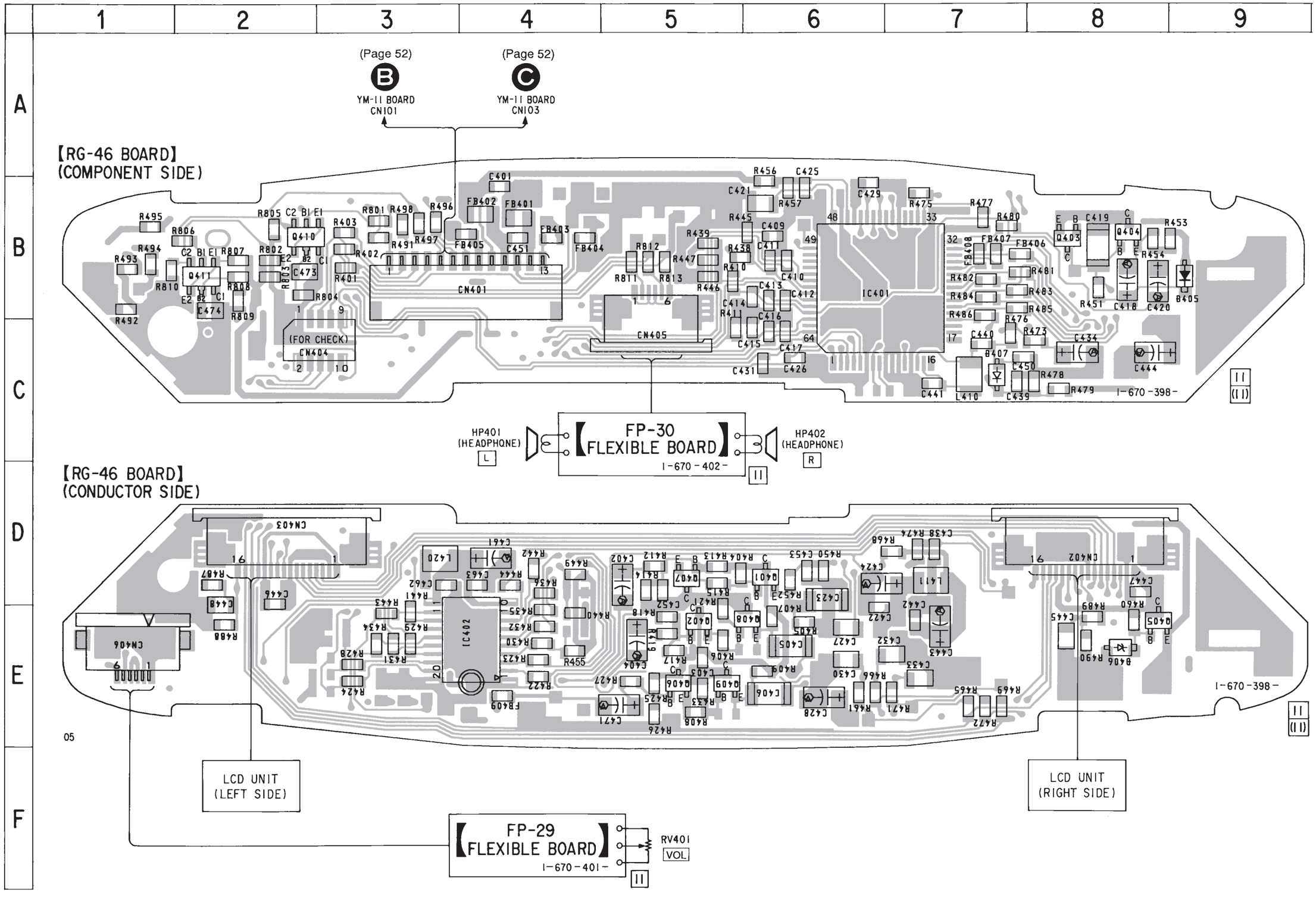
Ref. No.	Location
D501	F-6
D502	E-5
D505	E-5
D507	D-4
D509	C-5
D510	D-5
D511	D-5
D701	B-3
D702	A-3
D703	C-3
D704	C-3
D705	B-7
D706	B-6
D707	B-7
D708	C-3
D709	A-6
IC501	C-6
IC502	D-7
IC503	E-7
IC504	D-6
Q501	D-6
Q502	C-6
Q503	F-6
Q508	F-5
Q511	D-4
Q512	D-5
Q701	B-6

Note on Printed Wiring Board:

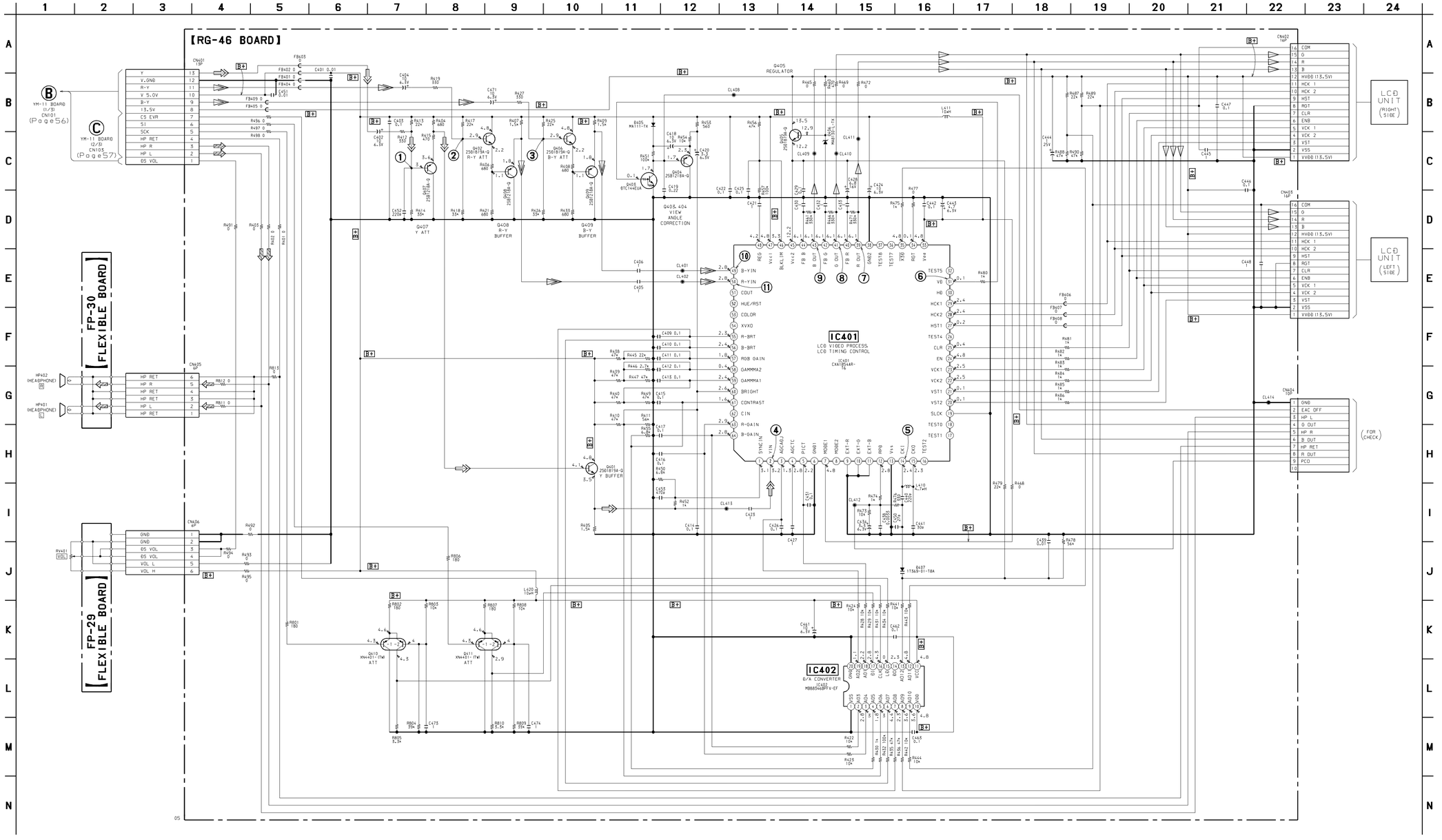
• ▒▒▒ : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

Caution:
Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

4-12. PRINTED WIRING BOARD – RG-46 Board –



4-13. SCHEMATIC DIAGRAM – RG-46 Board – • See page 84 for waveforms. • See pages 79 to 81 for IC Block Diagrams.



• **Semiconductor Location**

Ref. No.	Location
D405	B-9
D406	E-8
D407	C-7
IC401	B-7
IC402	E-4
Q401	D-6
Q402	E-5
Q403	B-8
Q404	B-8
Q405	E-8
Q406	E-5
Q407	D-5
Q408	E-6
Q409	E-5
Q410	B-2
Q411	B-2

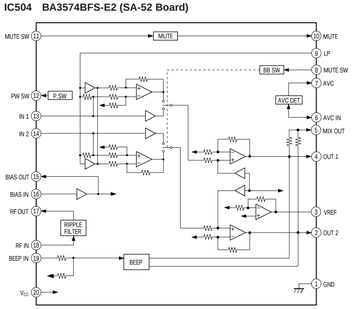
Note on Printed Wiring Board:
• ▒▒▒ : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

Caution:
Pattern face side: Parts on the pattern face side seen from (Conductor Side) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from (Component Side) the parts face are indicated.

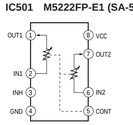
Note on Schematic Diagram:
• All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
• All resistors are in Ω and ¼ W or less unless otherwise specified.
• ▭ : panel designation.
• B+ : B+ Line.
• Power voltage is dc 9 V and fed with regulated dc power supply from external power voltage jack.
• Voltages and waveforms are dc with respect to ground in color-bar signal input.
• Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
• Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
• Circled numbers refer to waveforms.
• Signal path.
⇨ : VIDEO (Y)
⇨ : VIDEO (color difference signal)
⇨ : VIDEO (R. G. B)
⇨ : AUDIO

• **IC Block Diagrams**

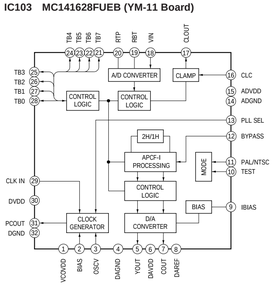
IC504 BA3574BFS-E2 (SA-52 Board)



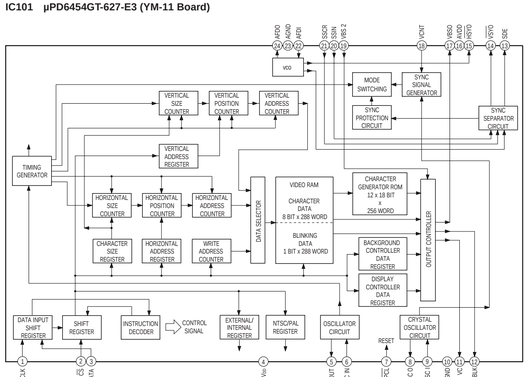
IC501 M5222FP-E1 (SA-52 Board)



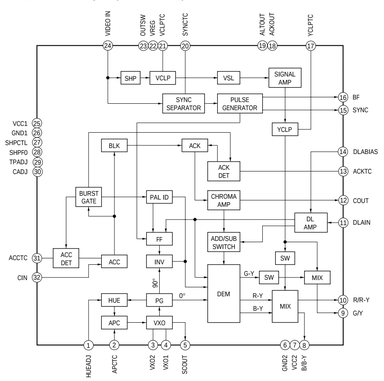
IC103 MC141628FUEB (YM-11 Board)



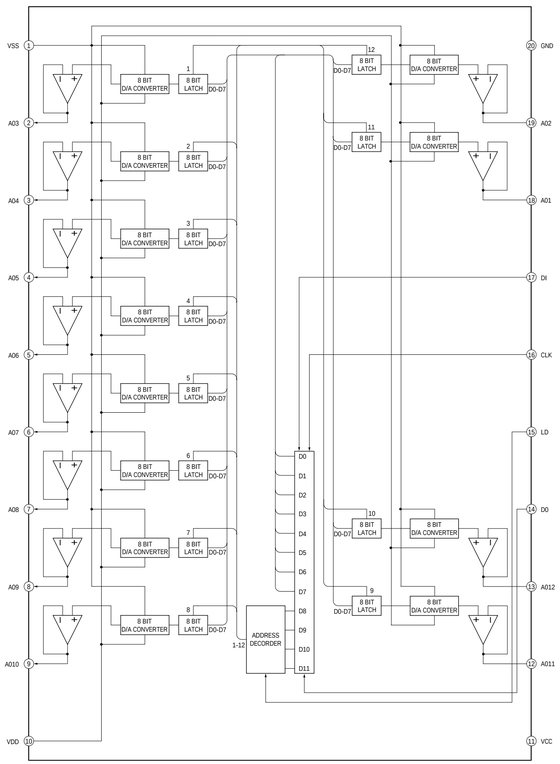
IC101 µPD6454GT-627-E3 (YM-11 Board)



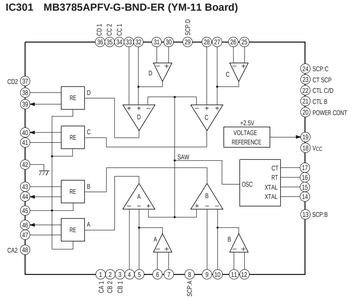
IC201 CXA1950Q-T4 (YM-11 Board)



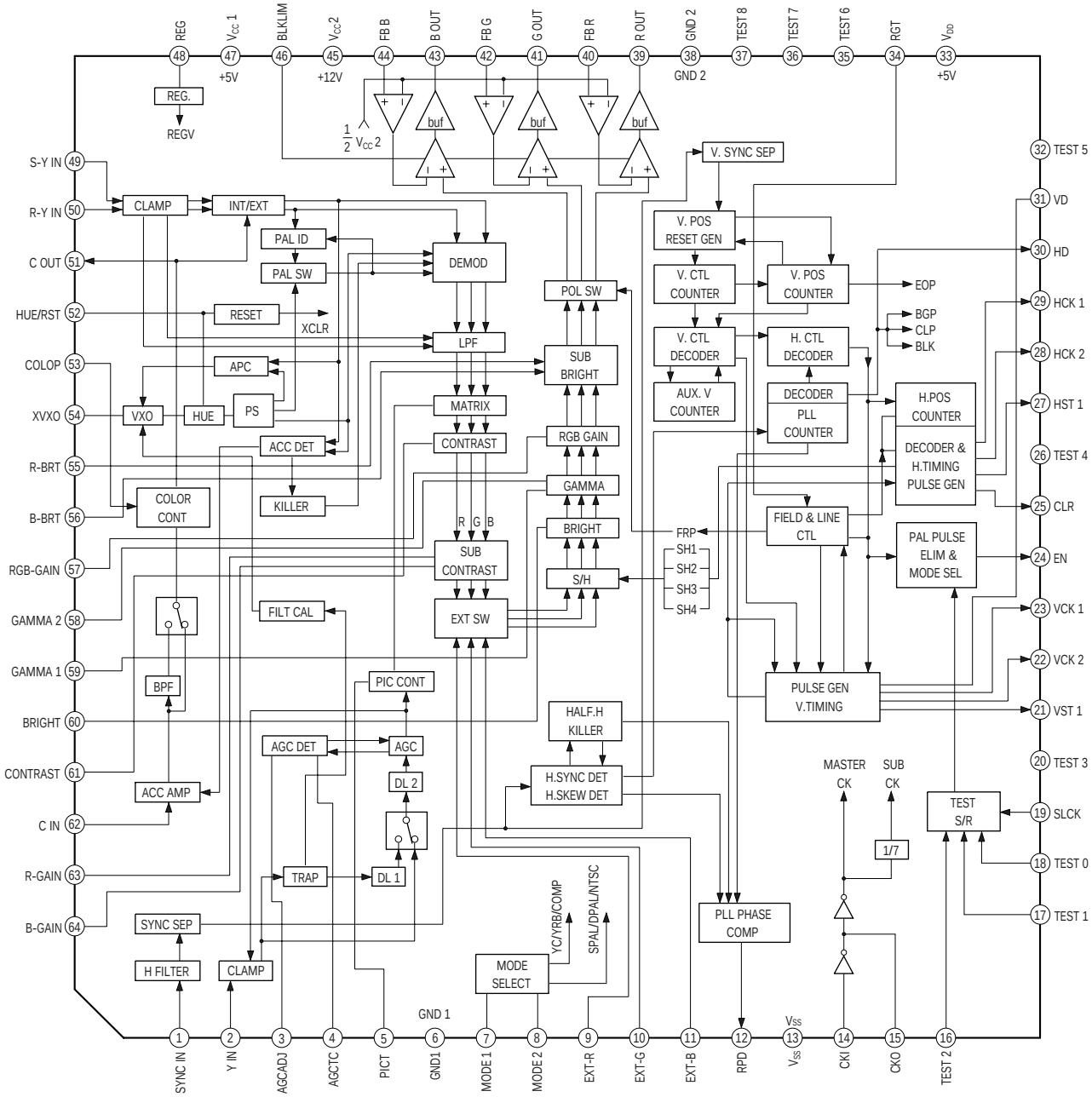
IC202 MB88346BPFV-EF (YM-11 Board)
IC402 MB88346BPFV-EF (YM-11 Board)



IC301 MB3785APFV-G-BND-ER (YM-11 Board)



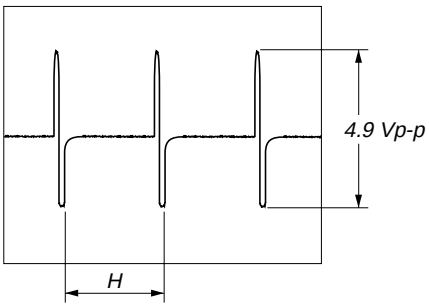
IC401 CXA1854AR-T6 (RG-46 Board)



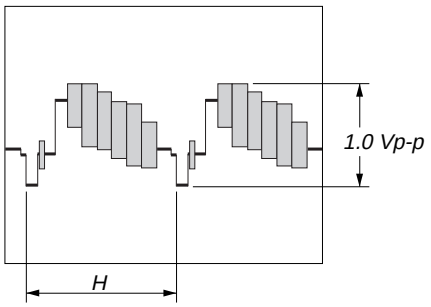
• **Waveforms**

– YM-11 Board (1/3) –

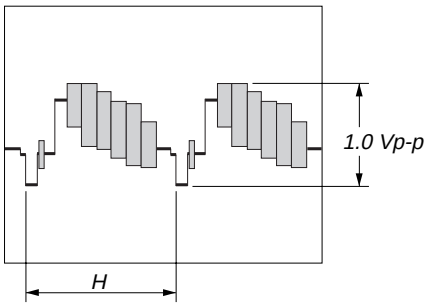
❶ IC101 ㉔ (AFDO)



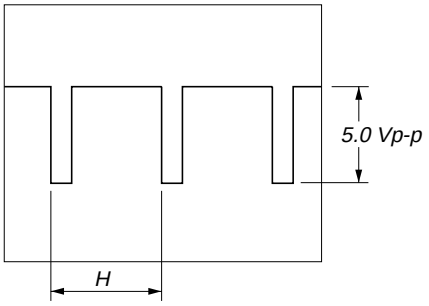
❷ IC101 ⑲ (VBSI)



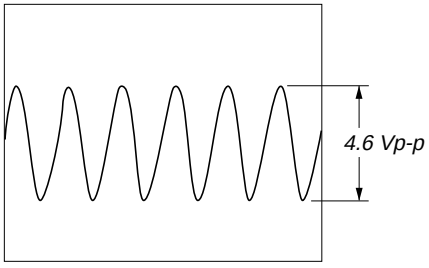
❸ IC101 ⑰ (VBSO)



❹ IC101 ⑭ (VSYO)

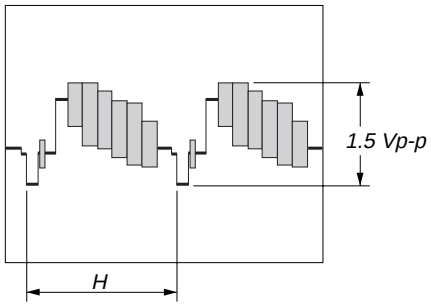


❺ IC101 ⑨ (XIN)

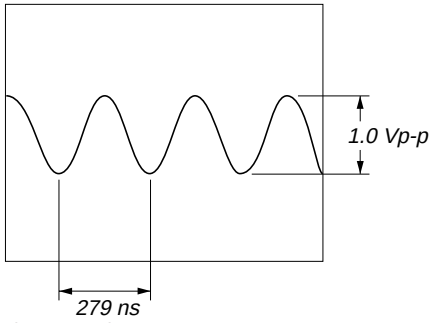


14.318 MHz

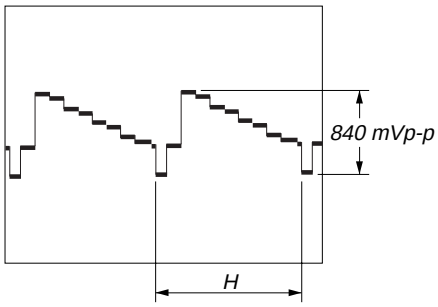
❻ IC103 ⑱ (V IN)



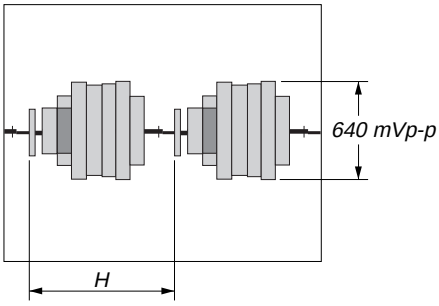
❼ IC103 ㉙ (CLK IN)



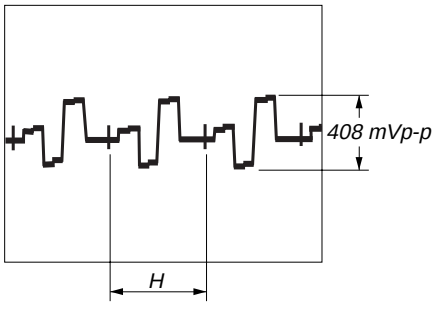
❽ IC103 ⑤ (Y OUT)



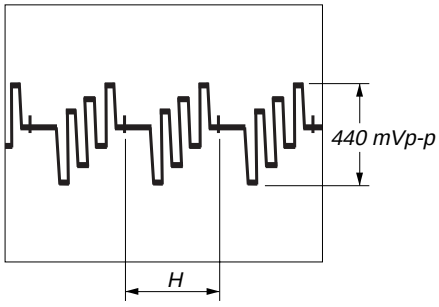
❾ IC103 ⑦ (C OUT)



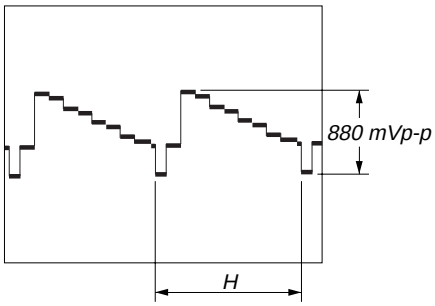
❿ Q257 Emitter



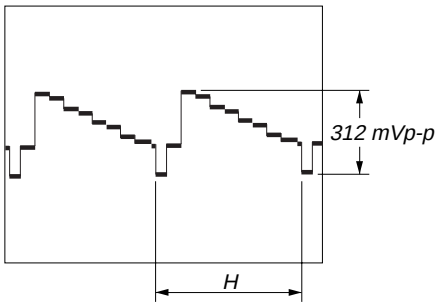
⓫ Q254 Emitter



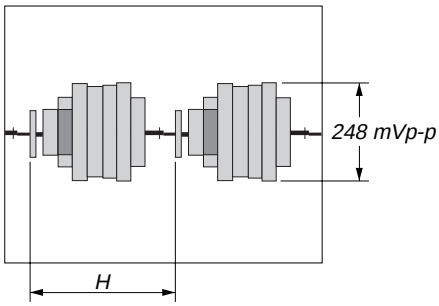
⓬ Q264 Emitter



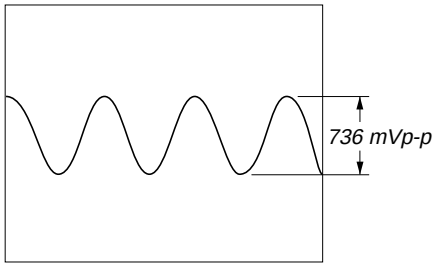
⓭ IC201 ㉔ (VIDEO IN)



⓮ IC201 ㉜ (CIN)

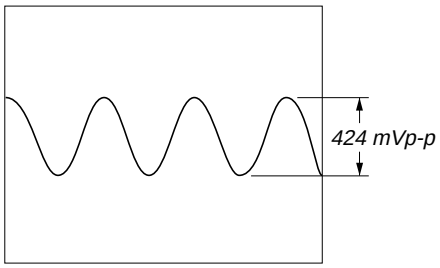


⓯ IC201 ⑤ (VX01)



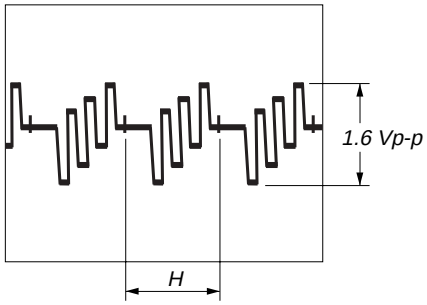
3.58 MHz

⓰ IC201 ⑤ (SC OUT)

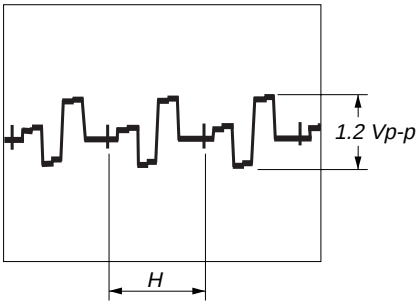


3.58 MHz

⓱ IC201 ⑧ (B/B-Y)

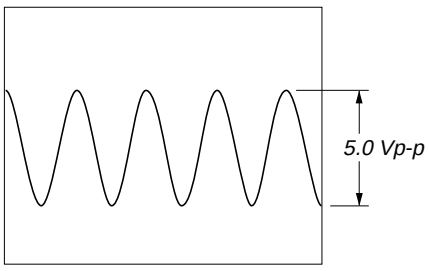


⓲ IC201 ⑩ (R/R-Y)



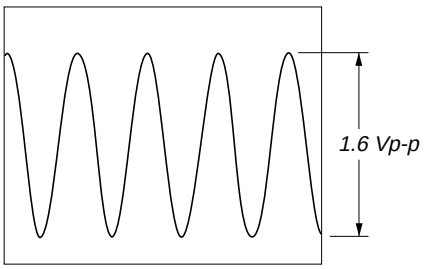
– YM-11 Board (2/3) –

❶ IC903 ③ (X0)



10 MHz

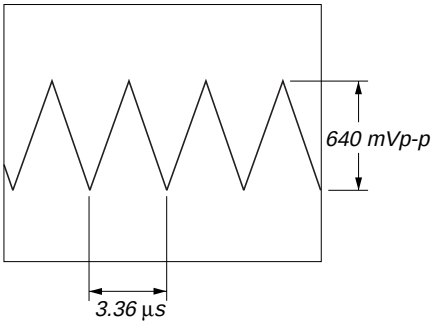
❷ IC903 ⑩ (CL0)



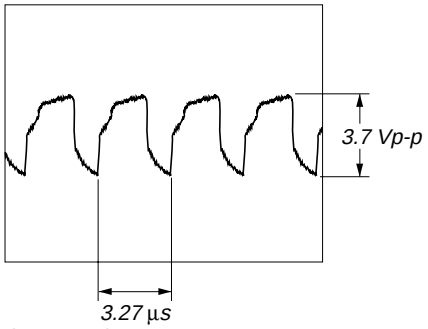
32 kHz

– YM-11 Board (3/3) –

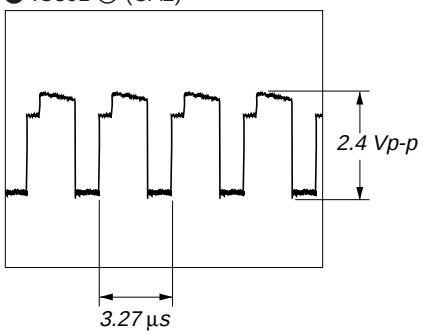
❶ IC301 ⑰ (CT)



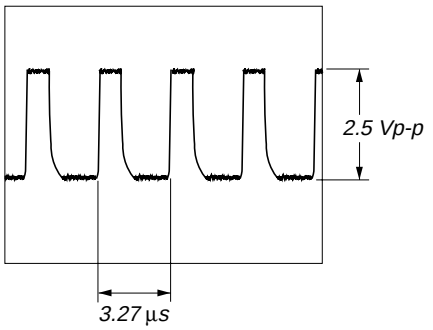
❷ IC301 ① (CA1)



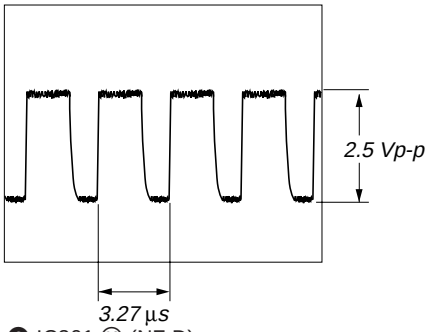
❸ IC301 ㊽ (CA2)



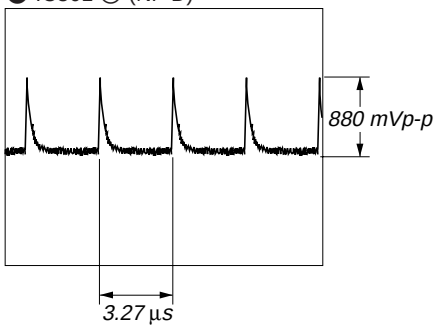
❹ IC301 ㊼ (NF A)



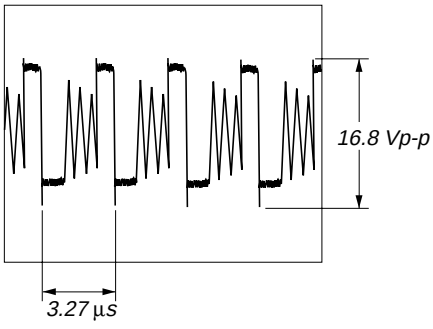
❺ IC301 ㊶ (NF C)



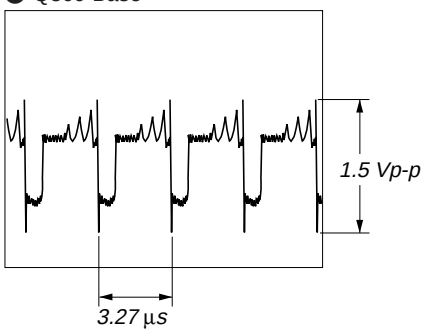
❻ IC301 ㊳ (NF D)



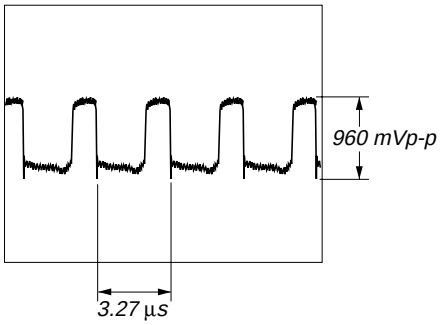
❼ Q309 Collector



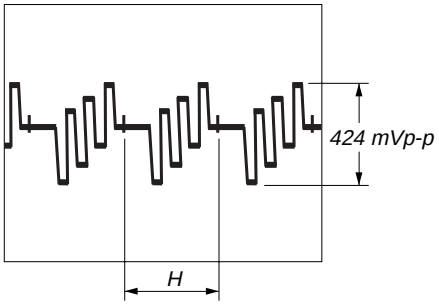
❽ Q309 Base



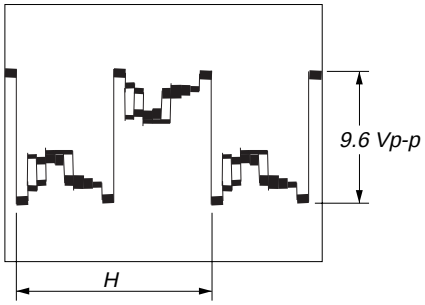
❾ Q301 ① (Base)



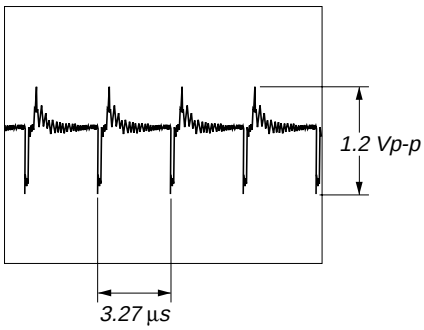
❸ Q406 Base



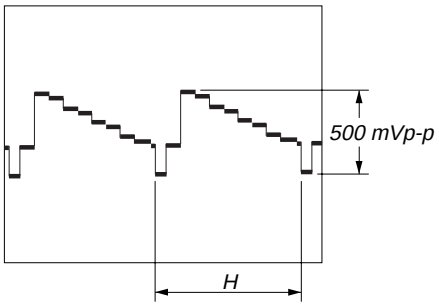
❽ IC401 ㊶ (G OUT)



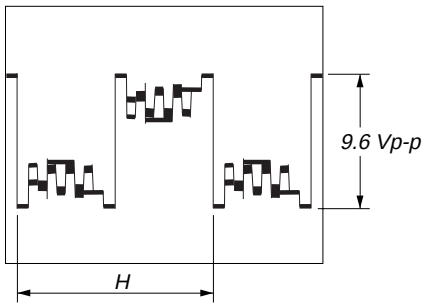
❿ Q301 ① (Base)



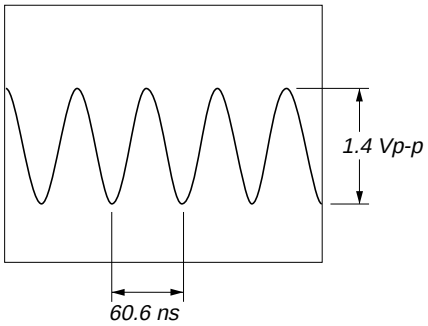
❹ IC401 ② (YIN)



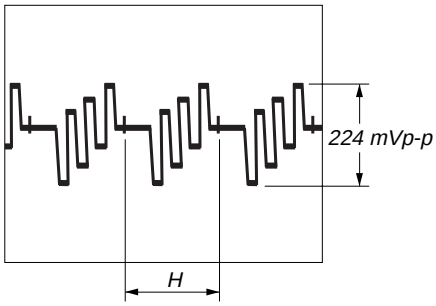
❾ IC401 ㊸ (B OUT)



❺ IC401 ⑭ (CIN)

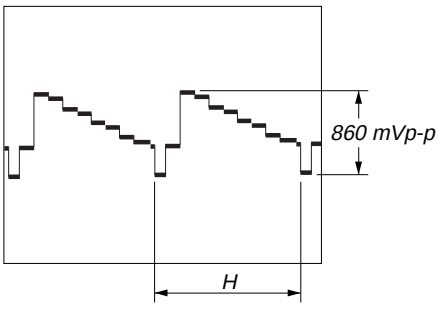


❿ IC401 ㊾ (B-Y IN)

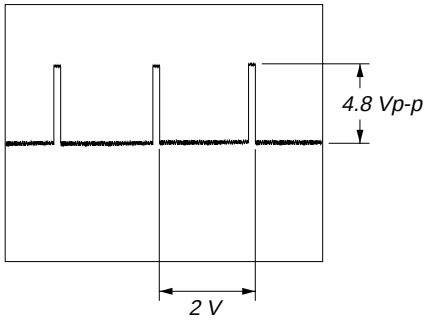


– RG-46 Board –

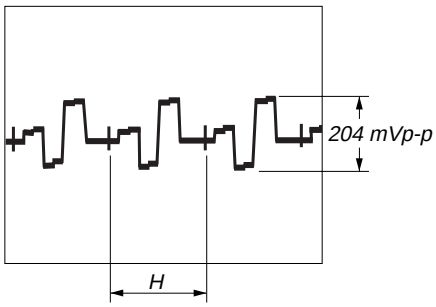
❶ Q407 Base



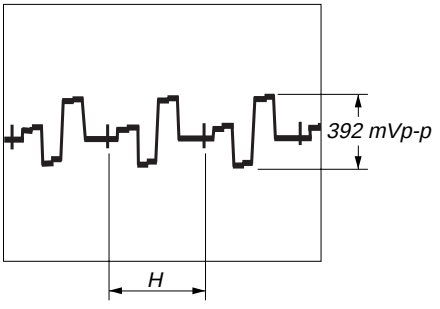
❻ IC401 ㉛ (VD)



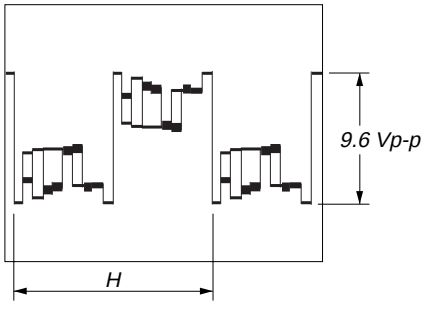
⓫ IC401 ㊿ (R-Y IN)



❷ Q402 Base



❼ IC401 ㊴ (R OUT)



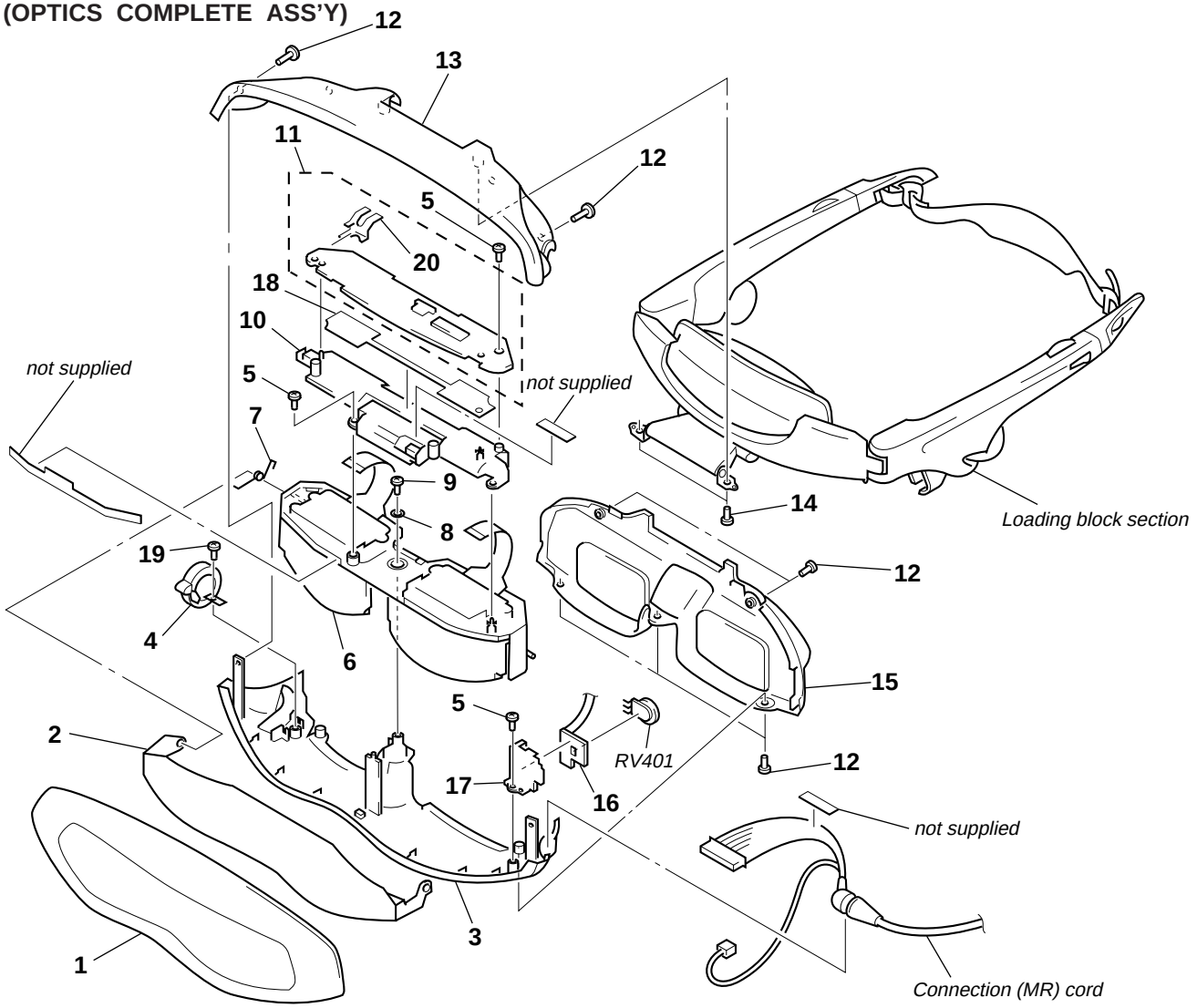
SECTION 5
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

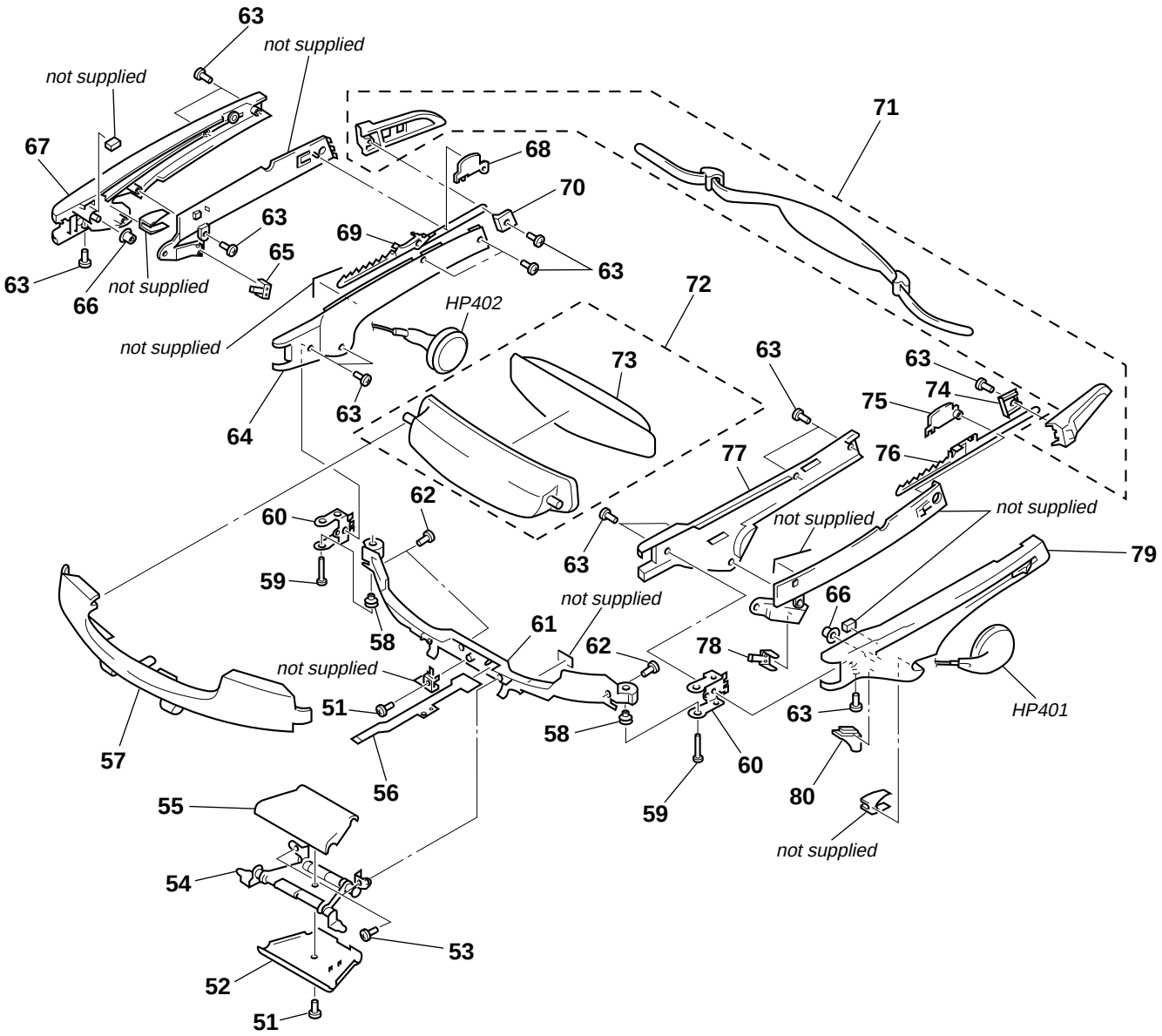
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

(1) DISPLAY UNIT SECTION-1 (OPTICS COMPLETE ASS'Y)



Ref. No.	Part No.	Description	Remark
1	3-988-749-02	PANEL, FRONT	
2	3-988-805-01	SHUTTER	
3	3-988-747-11	CABINET, LOWER	
4	X-3948-502-1	PLATE ASSY, CLICK	
5	3-973-497-31	SCREW (M1.7), 0-NO. +P 2	
6	A-8044-826-A	OPTICS COMPLETE ASSY	
7	3-988-761-01	SPRING, TORSION	
8	3-050-316-01	WASHER	
9	3-713-791-71	SCREW (M1.7X4)	
⚠10	1-475-821-11	LIGHT UNIT, BACK	
11	A-7067-151-A	RG-46 BOARD, COMPLETE	
12	3-704-197-31	SCREW (M1.4X3.0), LOCKING	
13	3-988-746-11	CABINET, UPPER	
14	3-713-786-01	SCREW (M2X4)	
15	X-3948-749-1	CABINET ASSY, REAR	
16	1-670-401-11	FP-29 FLEXIBLE BOARD	
17	3-988-754-01	RETAINER, VOL	
18	4-638-895-01	SHEET, REFLECTOR	
19	3-973-497-41	SCREW (M1.7), 0-NO. +P2	
20	4-638-687-01	SPRING, ELECTROSTATIC	
RV401	1-225-661-11	RES, VAR, CARBON 50K (VOL)	

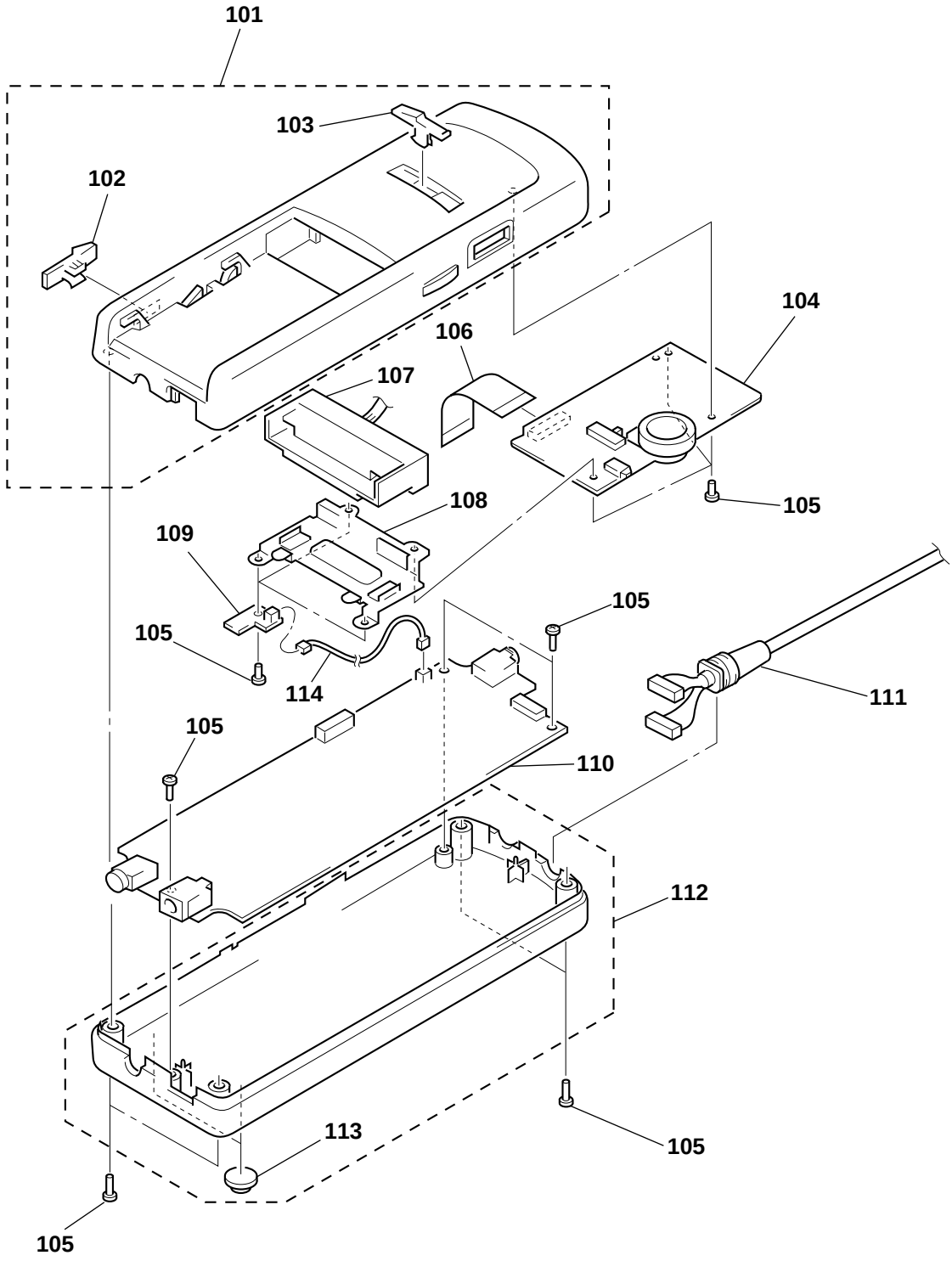
(2) DISPLAY UNIT SECTION-2 (LOADING BLOCK ASS'Y)



Ref. No.	Part No.	Description	Remark
51	3-704-197-32	SCREW (M1.4X3.0)	
52	3-050-017-01	COVER (REAR), HINGE	
53	3-713-786-01	SCREW (M2X4)	
54	X-3948-560-1	HINGE ASSY	
55	3-050-016-01	COVER (FRONT), HINGE	
56	1-670-402-11	FP-30 FLEXIBLE BOARD	
57	3-988-762-01	CABINET (FRONT), FRONT	
58	3-988-771-01	BEARING, CABINET HINGE	
59	3-988-770-01	SHAFT, HINGE	
60	3-988-769-01	CABNET PLATE, HINGE	
61	X-3948-503-1	CABINET (REAR) ASSY, FRONT	
62	3-719-381-01	SCREW (M2X4)	
63	3-713-791-11	SCREW (M1.7X5), TAPPING, P2	
64	3-988-774-02	CABINET (R) (REAR), HORIZONTAL	
65	3-050-032-01	SPRING (R), HP LOCK	
66	3-988-776-01	PULLEY, FIXED	

Ref. No.	Part No.	Description	Remark
67	X-3948-504-2	CABINET (R) ASSY	
68	3-988-782-01	BUTTON (R), RELEASE	
69	X-3948-705-1	PLATE (R) ASSY, SLIDE	
70	3-989-031-01	HOOK (R) (REAR), BELT	
71	A-7093-797-A	BELT BLOCK ASSY, HEAD	
72	A-7083-699-A	PAD BLOCK ASSY	
73	3-050-317-01	PAD	
74	3-989-032-01	HOOK (L) (REAR), BELT	
75	3-988-783-01	BUTTON (L), RELEASE	
76	X-3948-706-1	PLATE (L) ASSY, SLIDE	
77	3-988-775-02	CABINET (L) (REAR), HORIZONTAL	
78	3-050-033-01	SPRING (L), HP LOCK	
79	X-3948-505-2	CABINET (L) ASSY	
80	3-050-817-01	HOOK, CORD	
HP401	8-953-118-92	HEADPHONE MDR-E838PT/2 SET (L)	
HP402	8-953-118-92	HEADPHONE MDR-E838PT/2 SET (R)	

(3) POWER SUPPLY BOX SECTION



Ref. No.	Part No.	Description	Remark
101	X-3948-508-1	CABINET (IF) ASSY, UPPER	
102	3-988-786-01	BUTTON, BATTERY RELEASE	
103	3-050-073-01	KNOB, POWER	
104	A-7073-588-A	SA-52 BOARD, COMPLETE	
105	3-945-884-11	SCREW (2X6)	
106	1-777-761-11	WIRE (FLAT TYPE) (24 CORE)	
107	1-694-076-21	TERMINAL BOARD, BATTERY	
* 108	3-988-800-01	RETAINER, TERMINAL	
109	A-8054-762-A	SW-312 MOUNT BOARD, COMPLETE	
110	A-7067-152-A	YM-11 BOARD, COMPLETE	
111	1-783-687-11	CORD, CONNECTION (MR)	
112	X-3948-507-1	CABINET (IF) ASSY, LOWER	
113	3-740-607-01	CUSHION	
114	1-958-979-11	HARNESS SY	

RG-46

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-7067-151-A	RG-46 BOARD, COMPLETE			
		**********			
	4-638-687-01	SPRING, ELECTROSTATIC			
		< CAPACITOR >			
C401	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C402	1-117-920-91	TANTAL. CHIP	10uF	20%	6.3V
C403	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C404	1-117-920-91	TANTAL. CHIP	10uF	20%	6.3V
C405	1-107-682-91	CERAMIC CHIP	1uF	10%	16V
C406	1-107-682-91	CERAMIC CHIP	1uF	10%	16V
C409	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C410	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C411	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C412	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C413	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C414	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C415	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C416	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C417	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C418	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C419	1-164-299-91	CERAMIC CHIP	0.22uF	10%	25V
C420	1-135-150-91	TANTAL. CHIP	3.3uF	20%	6.3V
C421	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C422	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C423	1-107-682-91	CERAMIC CHIP	1uF	10%	16V
C424	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C425	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C426	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C427	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C428	1-113-994-91	TANTAL. CHIP	6.8uF	20%	16V
C429	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C430	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C431	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C432	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C433	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C434	1-135-150-91	TANTAL. CHIP	3.3uF	20%	6.3V
C438	1-162-967-91	CERAMIC CHIP	0.0033uF	10%	50V
C439	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C440	1-164-230-91	CERAMIC CHIP	220PF	5%	50V
C441	1-164-378-91	CERAMIC CHIP	30PF	5%	50V
C442	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C443	1-109-935-91	TANTAL. CHIP	4.7uF	20%	6.3V
C444	1-135-177-91	TANTAL. CHIP	1uF	20%	25V
C445	1-164-346-91	CERAMIC CHIP	1uF		16V
C446	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C447	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C448	1-164-346-91	CERAMIC CHIP	1uF		16V
C450	1-162-920-91	CERAMIC CHIP	27PF	5%	50V
C451	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C452	1-164-230-91	CERAMIC CHIP	220PF	5%	50V
C453	1-164-315-91	CERAMIC CHIP	470PF	5%	50V
C461	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C462	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C463	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C471	1-117-920-91	TANTAL. CHIP	10uF	20%	6.3V
C473	1-164-346-91	CERAMIC CHIP	1uF		16V
C474	1-164-346-91	CERAMIC CHIP	1uF		16V
		< CONNECTOR >			
CN401	1-770-630-21	PIN, CONNECTOR 13P			
* CN402	1-573-356-21	CONNECTOR, FFC/FPC 16P			
* CN403	1-573-356-21	CONNECTOR, FFC/FPC 16P			
* CN404	1-573-984-21	CONNECTOR, BOARD TO BOARD 10P			
CN405	1-573-915-21	CONNECTOR, FFC/FPC (ZIF) 6P			
CN406	1-785-113-21	CONNECTOR, FPC (ZIF) 6P			
		< DIODE >			
D405	8-719-404-50	DIODE MA111-TX			
D406	8-719-045-73	DIODE MA8130-L-TX			
D407	8-713-101-56	DIODE 1T369-01-T8A			
		< SHORT >			
FB401	1-216-295-91	SHORT	0		
FB402	1-216-295-91	SHORT	0		
FB403	1-216-864-91	SHORT	0		
FB404	1-216-864-91	SHORT	0		
FB405	1-216-864-91	SHORT	0		

Ref. No.	Part No.	Description			Remark
FB406	1-216-864-91	SHORT	0		
FB407	1-216-864-91	SHORT	0		
FB408	1-216-864-91	SHORT	0		
FB409	1-216-864-91	SHORT	0		
		< IC >			
IC401	8-752-075-89	IC CXA1854AR-T6			
IC402	8-759-064-35	IC MB88346BPFV-EF			
		< INDUCTOR >			
L410	1-412-947-21	INDUCTOR	4.7uH		
L411	1-414-078-21	INDUCTOR	10uH		
L420	1-414-078-21	INDUCTOR	10uH		
		< TRANSISTOR >			
Q401	8-729-420-29	TRANSISTOR	2SD1819A-QRS-TX		
Q402	8-729-420-29	TRANSISTOR	2SD1819A-QRS-TX		
Q403	8-729-029-14	TRANSISTOR	DTC144EUA-T106		
Q404	8-729-420-26	TRANSISTOR	2SB1218A-QRS-TX		
Q405	8-729-420-29	TRANSISTOR	2SD1819A-QRS-TX		
Q406	8-729-420-29	TRANSISTOR	2SD1819A-QRS-TX		
Q407	8-729-420-26	TRANSISTOR	2SB1218A-QRS-TX		
Q408	8-729-420-26	TRANSISTOR	2SB1218A-QRS-TX		
Q409	8-729-420-26	TRANSISTOR	2SB1218A-QRS-TX		
Q410	8-729-403-28	TRANSISTOR	XN4401- (TW)		
Q411	8-729-403-28	TRANSISTOR	XN4401- (TW)		
		< SHORT >			
R401	1-216-864-91	SHORT	0		
R402	1-216-864-91	SHORT	0		
R403	1-216-864-91	SHORT	0		
R404	1-216-819-91	RES, CHIP	680	5%	1/16W
R405	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R406	1-216-819-91	RES, CHIP	680	5%	1/16W
R407	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R408	1-216-819-91	RES, CHIP	680	5%	1/16W
R409	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R410	1-216-841-91	RES, CHIP	47K	5%	1/16W
R411	1-216-842-91	RES, CHIP	56K	5%	1/16W
R412	1-216-815-91	RES, CHIP	330	5%	1/16W
R413	1-216-837-91	RES, CHIP	22K	5%	1/16W
R414	1-216-839-91	RES, CHIP	33K	5%	1/16W
R415	1-216-817-91	RES, CHIP	470	5%	1/16W
R417	1-216-837-91	RES, CHIP	22K	5%	1/16W
R418	1-216-839-91	RES, CHIP	33K	5%	1/16W
R419	1-216-815-91	RES, CHIP	330	5%	1/16W
R421	1-216-819-91	RES, CHIP	680	5%	1/16W
R422	1-216-833-91	RES, CHIP	10K	5%	1/16W
R423	1-216-833-91	RES, CHIP	10K	5%	1/16W
R424	1-216-833-91	RES, CHIP	10K	5%	1/16W
R425	1-216-837-91	RES, CHIP	22K	5%	1/16W
R426	1-216-839-91	RES, CHIP	33K	5%	1/16W
R427	1-216-815-91	RES, CHIP	330	5%	1/16W

Ref. No.	Part No.	Description			Remark
R428	1-216-833-91	RES, CHIP	10K	5%	1/16W
R429	1-216-833-91	RES, CHIP	10K	5%	1/16W
R430	1-216-821-91	RES, CHIP	1K	5%	1/16W
R431	1-216-833-91	RES, CHIP	10K	5%	1/16W
R432	1-216-845-91	RES, CHIP	100K	5%	1/16W
R433	1-216-819-91	RES, CHIP	680	5%	1/16W
R434	1-216-833-91	RES, CHIP	10K	5%	1/16W
R435	1-216-841-91	RES, CHIP	47K	5%	1/16W
R436	1-216-841-91	RES, CHIP	47K	5%	1/16W
R438	1-216-841-91	RES, CHIP	47K	5%	1/16W
R439	1-216-841-91	RES, CHIP	47K	5%	1/16W
R440	1-216-841-91	RES, CHIP	47K	5%	1/16W
R441	1-216-833-91	RES, CHIP	10K	5%	1/16W
R442	1-218-871-91	RES, CHIP	10K	0.50%	1/16W
R443	1-216-833-91	RES, CHIP	10K	5%	1/16W
R444	1-218-871-91	RES, CHIP	10K	0.50%	1/16W
R445	1-216-837-91	RES, CHIP	22K	5%	1/16W
R446	1-216-826-91	RES, CHIP	2.7K	5%	1/16W
R447	1-216-841-91	RES, CHIP	47K	5%	1/16W
R449	1-216-841-91	RES, CHIP	47K	5%	1/16W
R450	1-216-831-91	RES, CHIP	6.8K	5%	1/16W
R451	1-216-845-91	RES, CHIP	100K	5%	1/16W
R452	1-216-821-91	RES, CHIP	1K	5%	1/16W
R453	1-216-818-91	RES, CHIP	560	5%	1/16W
R454	1-216-833-91	RES, CHIP	10K	5%	1/16W
R455	1-216-831-91	RES, CHIP	6.8K	5%	1/16W
R456	1-216-841-91	RES, CHIP	47K	5%	1/16W
R457	1-216-845-91	RES, CHIP	100K	5%	1/16W
R460	1-216-817-91	RES, CHIP	470	5%	1/16W
R461	1-216-851-91	RES, CHIP	330K	5%	1/16W
R465	1-216-864-91	SHORT	0		
R466	1-216-851-91	RES, CHIP	330K	5%	1/16W
R468	1-216-864-91	SHORT	0		
R469	1-216-864-91	SHORT	0		
R471	1-216-851-91	RES, CHIP	330K	5%	1/16W
R472	1-216-864-91	SHORT	0		
R473	1-216-833-91	RES, CHIP	10K	5%	1/16W
R474	1-216-821-91	RES, CHIP	1K	5%	1/16W
R475	1-216-821-91	RES, CHIP	1K	5%	1/16W
R476	1-216-815-91	RES, CHIP	330	5%	1/16W
R477	1-216-864-91	SHORT	0		
R478	1-216-842-91	RES, CHIP	56K	5%	1/16W
R479	1-216-837-91	RES, CHIP	22K	5%	1/16W
R480	1-216-821-91	RES, CHIP	1K	5%	1/16W
R481	1-216-821-91	RES, CHIP	1K	5%	1/16W
R482	1-216-821-91	RES, CHIP	1K	5%	1/16W
R483	1-216-821-91	RES, CHIP	1K	5%	1/16W
R484	1-216-821-91	RES, CHIP	1K	5%	1/16W
R485	1-216-821-91	RES, CHIP	1K	5%	1/16W
R486	1-216-821-91	RES, CHIP	1K	5%	1/16W
R487	1-218-879-91	RES, CHIP	22K	0.50%	1/16W
R488	1-218-887-91	RES, CHIP	47K	0.50%	1/16W
R489	1-218-879-91	RES, CHIP	22K	0.50%	1/16W
R490	1-218-887-91	RES, CHIP	47K	0.50%	1/16W

RG-46 **SA-52**

Ref. No.	Part No.	Description			Remark
R491	1-216-864-91	SHORT	0		
R492	1-216-864-91	SHORT	0		
R493	1-216-864-91	SHORT	0		
R494	1-216-864-91	SHORT	0		
R495	1-216-864-91	SHORT	0		
R496	1-216-864-91	SHORT	0		
R497	1-216-864-91	SHORT	0		
R498	1-216-864-91	SHORT	0		
R801	1-216-812-91	RES, CHIP	180	5%	1/16W
R802	1-216-812-91	RES, CHIP	180	5%	1/16W
R803	1-216-833-91	RES, CHIP	10K	5%	1/16W
R804	1-216-840-91	RES, CHIP	39K	5%	1/16W
R805	1-216-827-91	RES, CHIP	3.3K	5%	1/16W
R806	1-216-812-91	RES, CHIP	180	5%	1/16W
R807	1-216-812-91	RES, CHIP	180	5%	1/16W
R808	1-216-833-91	RES, CHIP	10K	5%	1/16W
R809	1-216-840-91	RES, CHIP	39K	5%	1/16W
R810	1-216-827-91	RES, CHIP	3.3K	5%	1/16W
R811	1-216-864-91	SHORT	0		
R812	1-216-864-91	SHORT	0		
R813	1-216-864-91	SHORT	0		

****

A-7073-588-A SA-52 BOARD, COMPLETE

****

< CAPACITOR >

C501	1-135-181-91	TANTAL. CHIP	4.7uF	20%	6.3V
C502	1-135-181-91	TANTAL. CHIP	4.7uF	20%	6.3V
C503	1-126-205-21	ELECT CHIP	47uF	20%	6.3V
C504	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C505	1-164-346-91	CERAMIC CHIP	1uF		16V
C506	1-165-176-91	CERAMIC CHIP	0.047uF	10%	16V
C507	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C508	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C509	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C510	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C511	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C512	1-126-198-21	ELECT CHIP	4.7uF	20%	35V
C513	1-126-198-21	ELECT CHIP	4.7uF	20%	35V
C516	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C519	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C522	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C524	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C525	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C526	1-164-346-91	CERAMIC CHIP	1uF		16V
C527	1-124-779-21	ELECT CHIP	10uF	20%	16V
C528	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C529	1-164-346-91	CERAMIC CHIP	1uF		16V
C531	1-164-346-91	CERAMIC CHIP	1uF		16V
C532	1-162-964-91	CERAMIC CHIP	0.001uF	10%	50V
C533	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C534	1-164-346-91	CERAMIC CHIP	1uF		16V
C535	1-164-505-91	CERAMIC CHIP	2.2uF		16V
C536	1-164-222-91	CERAMIC CHIP	0.22uF		25V
C537	1-164-222-91	CERAMIC CHIP	0.22uF		25V
C539	1-126-210-21	ELECT CHIP	220uF	20%	4V
C542	1-164-346-91	CERAMIC CHIP	1uF		16V
C543	1-164-346-91	CERAMIC CHIP	1uF		16V
C544	1-107-682-91	CERAMIC CHIP	1uF	10%	16V

< CONNECTOR >

CN701	1-750-357-21	CONNECTOR, FFC/FPC (ZIF) 24P	

< DIODE >

D501	8-719-017-13	DIODE	02DZ7.5-TPH3
D502	8-719-404-50	DIODE	MA111-TX
D505	8-719-404-50	DIODE	MA111-TX
D507	8-719-404-50	DIODE	MA111-TX
D509	8-719-017-13	DIODE	02DZ7.5-TPH3
D510	8-719-017-13	DIODE	02DZ7.5-TPH3
D511	8-719-017-13	DIODE	02DZ7.5-TPH3
D701	8-719-991-28	LED	CL-170G-CD-T (POWER)
D702	8-719-033-13	LED	CL-170Y-CD-T (CHARGE)
D703	8-719-017-13	DIODE	02DZ7.5-TPH3
D704	8-719-017-13	DIODE	02DZ7.5-TPH3
D705	8-719-017-13	DIODE	02DZ7.5-TPH3
D706	8-719-017-13	DIODE	02DZ7.5-TPH3
D707	8-719-017-13	DIODE	02DZ7.5-TPH3
D708	8-719-017-13	DIODE	02DZ7.5-TPH3
D709	8-719-017-13	DIODE	02DZ7.5-TPH3

< SHORT >

FB501	1-216-864-91	SHORT	0
FB502	1-216-864-91	SHORT	0
FB503	1-216-864-91	SHORT	0

< IC >

IC501	8-759-636-86	IC	M5222FP-E1
IC502	8-759-238-87	IC	TC4S66F (TE85R)
IC503	8-759-161-75	IC	NJM2112V (TE2)
IC504	8-759-482-30	IC	BA3574BFS-E2

< COIL >

L501	1-414-078-21	INDUCTOR	10uH

< TRANSISTOR >

Q501	8-729-402-85	TRANSISTOR	XN4601-TW
Q502	8-729-402-85	TRANSISTOR	XN4601-TW
Q503	8-729-029-14	TRANSISTOR	DTC144EUA-T106
Q508	8-729-420-26	TRANSISTOR	2SB1218A-QRS-TX
Q511	8-729-028-92	TRANSISTOR	DTA144TUA-T106
Q512	8-729-028-92	TRANSISTOR	DTA144TUA-T106
Q701	8-729-403-03	TRANSISTOR	XN4212-TW

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R501	1-216-839-91	RES, CHIP	33K	5%	1/16W
R502	1-216-839-91	RES, CHIP	33K	5%	1/16W
R503	1-216-839-91	RES, CHIP	33K	5%	1/16W
R504	1-216-839-91	RES, CHIP	33K	5%	1/16W
R505	1-216-844-91	RES, CHIP	82K	5%	1/16W
R506	1-218-862-91	RES, CHIP	4.3K	0.50%	1/16W
R509	1-216-845-91	RES, CHIP	100K	5%	1/16W
R511	1-216-833-91	RES, CHIP	10K	5%	1/16W
R512	1-216-833-91	RES, CHIP	10K	5%	1/16W
R514	1-216-833-91	RES, CHIP	10K	5%	1/16W
R515	1-216-833-91	RES, CHIP	10K	5%	1/16W
R516	1-216-837-91	RES, CHIP	22K	5%	1/16W
R517	1-216-841-91	RES, CHIP	47K	5%	1/16W
R519	1-216-841-91	RES, CHIP	47K	5%	1/16W
R520	1-216-837-91	RES, CHIP	22K	5%	1/16W
R521	1-216-837-91	RES, CHIP	22K	5%	1/16W
R522	1-216-837-91	RES, CHIP	22K	5%	1/16W
R523	1-216-839-91	RES, CHIP	33K	5%	1/16W
R524	1-216-837-91	RES, CHIP	22K	5%	1/16W
R525	1-216-837-91	RES, CHIP	22K	5%	1/16W
R526	1-216-837-91	RES, CHIP	22K	5%	1/16W
R527	1-216-837-91	RES, CHIP	22K	5%	1/16W
R528	1-216-837-91	RES, CHIP	22K	5%	1/16W
R529	1-216-837-91	RES, CHIP	22K	5%	1/16W
R530	1-216-837-91	RES, CHIP	22K	5%	1/16W
R537	1-216-829-91	RES, CHIP	4.7K	5%	1/16W
R540	1-216-845-91	RES, CHIP	100K	5%	1/16W
R541	1-216-805-91	RES, CHIP	47	5%	1/16W
R544	1-216-837-91	RES, CHIP	22K	5%	1/16W
R545	1-216-826-91	RES, CHIP	2.7K	5%	1/16W
R548	1-216-857-91	RES, CHIP	1M	5%	1/16W
R551	1-216-845-91	RES, CHIP	100K	5%	1/16W
R552	1-216-837-91	RES, CHIP	22K	5%	1/16W
R553	1-216-789-91	RES, CHIP	2.2	5%	1/16W
R554	1-216-789-91	RES, CHIP	2.2	5%	1/16W
R556	1-216-798-91	RES, CHIP	12	5%	1/16W
R557	1-216-798-91	RES, CHIP	12	5%	1/16W
R560	1-216-864-91	SHORT	0		
R562	1-216-863-91	RES, CHIP	3.3M	5%	1/16W
R565	1-216-864-91	SHORT	0		
R566	1-216-821-91	RES, CHIP	1K	5%	1/16W
R567	1-216-821-91	RES, CHIP	1K	5%	1/16W
R701	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R702	1-216-864-91	SHORT	0		
R703	1-216-817-91	RES, CHIP	470	5%	1/16W
R704	1-216-817-91	RES, CHIP	470	5%	1/16W
		< SWITCH >			
S701	1-572-498-21	SWITCH, SLIDE (ON/OFF)			
S702	1-692-088-41	SWITCH, TACTILE (MENU)			

Ref. No.	Part No.	Description			Remark
S703	1-473-805-11	ENCODER, (WITH SELECT SWITCH)			(DISPLAY, SEL/EXEC)
**********					
	A-8054-762-A	SW-312 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
* CN702	1-770-619-21	PIN, CONNECTOR 2P			
		< DIODE >			
D720	8-719-017-13	DIODE 02DZ7.5-TPH3			
		< SWITCH >			
S705	1-762-805-21	SWITCH, PUSH (1 KEY)			(BATTERY PACK DETECT)
**********					
	A-7067-152-A	YM-11 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C102	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C103	1-124-778-21	ELECT CHIP	22uF	20%	6.3V
C104	1-126-196-21	ELECT CHIP	3.3uF	20%	50V
C105	1-135-181-91	TANTAL. CHIP	4.7uF	20%	6.3V
C106	1-135-150-91	TANTAL. CHIP	3.3uF	20%	6.3V
C107	1-162-966-91	CERAMIC CHIP	0.0022uF	10%	50V
C108	1-162-970-91	CERAMIC CHIP	0.01uF	10%	25V
C109	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C110	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C115	1-162-970-91	CERAMIC CHIP	0.01uF	10%	25V
C121	1-164-378-91	CERAMIC CHIP	30PF	5%	50V
C122	1-162-918-91	CERAMIC CHIP	18PF	5%	50V
C123	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C124	1-162-969-91	CERAMIC CHIP	0.0068uF	10%	25V
C125	1-162-969-91	CERAMIC CHIP	0.0068uF	10%	25V
C130	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C131	1-135-181-91	TANTAL. CHIP	4.7uF	20%	6.3V
C133	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C151	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C152	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C155	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C156	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C158	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C159	1-164-346-91	CERAMIC CHIP	1uF		16V
C160	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C161	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C162	1-164-346-91	CERAMIC CHIP	1uF		16V
C163	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C164	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C165	1-164-156-91	CERAMIC CHIP	0.1uF		25V

YM-11

Ref. No.	Part No.	Description			Remark
C171	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C172	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C174	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C175	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C176	1-107-725-91	CERAMIC CHIP	0.1uF	10%	16V
C178	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C201	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C202	1-107-725-91	CERAMIC CHIP	0.1uF	10%	16V
C203	1-165-176-91	CERAMIC CHIP	0.047uF	10%	16V
C204	1-165-176-91	CERAMIC CHIP	0.047uF	10%	16V
C205	1-165-176-91	CERAMIC CHIP	0.047uF	10%	16V
C208	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C209	1-107-725-91	CERAMIC CHIP	0.1uF	10%	16V
C210	1-109-982-91	CERAMIC CHIP	1uF	10%	10V
C211	1-162-918-91	CERAMIC CHIP	18PF	5%	50V
C212	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C213	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C214	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C215	1-107-725-91	CERAMIC CHIP	0.1uF	10%	16V
C233	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C234	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C235	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C236	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C237	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C238	1-107-823-91	CERAMIC CHIP	0.47uF	10%	16V
C240	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C253	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C255	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C257	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C263	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C264	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C265	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C266	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C301	1-164-836-91	CERAMIC CHIP	6.8uF		16V
C303	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C304	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C306	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C307	1-126-204-21	ELECT CHIP	47uF	20%	16V
C308	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C309	1-107-725-91	CERAMIC CHIP	0.1uF	10%	16V
C310	1-164-814-91	CERAMIC CHIP	470PF	2%	50V
C312	1-107-725-91	CERAMIC CHIP	0.1uF	10%	16V
C313	1-107-725-91	CERAMIC CHIP	0.1uF	10%	16V
C314	1-107-725-91	CERAMIC CHIP	0.1uF	10%	16V
C315	1-162-965-91	CERAMIC CHIP	0.0015uF	10%	50V
C316	1-162-967-91	CERAMIC CHIP	0.0033uF	10%	50V
C317	1-164-227-91	CERAMIC CHIP	0.022uF	10%	25V
C318	1-162-964-91	CERAMIC CHIP	0.001uF	10%	50V
C319	1-162-962-91	CERAMIC CHIP	470PF	10%	50V
C320	1-107-725-91	CERAMIC CHIP	0.1uF	10%	16V
C321	1-162-964-91	CERAMIC CHIP	0.001uF	10%	50V
C322	1-162-962-91	CERAMIC CHIP	470PF	10%	50V
C323	1-162-963-91	CERAMIC CHIP	680PF	10%	50V
C324	1-162-963-91	CERAMIC CHIP	680PF	10%	50V

Ref. No.	Part No.	Description			Remark
C325	1-162-963-91	CERAMIC CHIP	680PF	10%	50V
C326	1-162-963-91	CERAMIC CHIP	680PF	10%	50V
C327	1-126-379-21	ELECT CHIP	22uF	20%	16V
C328	1-117-190-91	ELECT CHIP	10uF	20%	10V
C330	1-164-836-91	CERAMIC CHIP	6.8uF		16V
C331	1-164-506-91	CERAMIC CHIP	4.7uF		16V
C332	1-104-932-91	CERAMIC CHIP	10uF		16V
C333	1-164-836-91	CERAMIC CHIP	6.8uF		16V
C334	1-164-506-91	CERAMIC CHIP	4.7uF		16V
C335	1-164-506-91	CERAMIC CHIP	4.7uF		16V
C337	1-117-190-91	ELECT CHIP	10uF	20%	10V
C338	1-164-337-91	CERAMIC CHIP	2.2uF		16V
C339	1-164-346-91	CERAMIC CHIP	1uF		16V
C340	1-162-638-91	CERAMIC CHIP	1uF		16V
C341	1-126-393-21	ELECT CHIP	33uF	20%	10V
C342	1-164-346-91	CERAMIC CHIP	1uF		16V
C344	1-126-393-21	ELECT CHIP	33uF	20%	10V
C345	1-107-725-91	CERAMIC CHIP	0.1uF	10%	16V
C346	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C347	1-164-346-91	CERAMIC CHIP	1uF		16V
C601	1-164-346-91	CERAMIC CHIP	1uF		16V
C602	1-164-346-91	CERAMIC CHIP	1uF		16V
C603	1-164-346-91	CERAMIC CHIP	1uF		16V
C604	1-164-230-91	CERAMIC CHIP	220PF	5%	50V
C605	1-164-230-91	CERAMIC CHIP	220PF	5%	50V
C901	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
C902	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C903	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C904	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C905	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C906	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C907	1-162-966-91	CERAMIC CHIP	0.0022uF	10%	50V
C908	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C910	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C911	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C912	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C913	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C914	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C915	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C916	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C917	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C918	1-164-346-91	CERAMIC CHIP	1uF		16V
C919	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C920	1-107-686-91	TANTAL. CHIP	4.7uF	20%	16V
C921	1-162-921-91	CERAMIC CHIP	33PF	5%	50V
C922	1-162-918-91	CERAMIC CHIP	18PF	5%	50V
C923	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C924	1-135-150-91	TANTAL. CHIP	3.3uF	20%	6.3V
C925	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C928	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C929	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C930	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C931	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C932	1-162-919-91	CERAMIC CHIP	22PF	5%	50V

Ref. No.	Part No.	Description			Remark
C933	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C934	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C937	1-164-156-91	CERAMIC CHIP	0.1uF		25V
C941	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C942	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C943	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C944	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C945	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C946	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C947	1-162-974-91	CERAMIC CHIP	0.01uF		50V
C948	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C949	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C950	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C951	1-162-919-91	CERAMIC CHIP	22PF	5%	50V
C952	1-135-259-91	TANTAL. CHIP	10uF	20%	6.3V
		< CONNECTOR >			
CN101	1-770-624-21	PIN, CONNECTOR 7P			
* CN102	1-573-984-21	CONNECTOR, BOARD TO BOARD 10P			
CN103	1-770-626-21	PIN, CONNECTOR 9P			
CN301	1-573-768-21	PIN, CONNECTOR (1.5MM)(SMD) 5P			
CN901	1-779-336-21	CONNECTOR, FFC/FPC 24P			
CN902	1-691-550-21	PIN, CONNECTOR (1.5MM)(SMD) 3P			
* CN903	1-695-320-21	PIN, CONNECTOR (1.5MM)(SMD) 2P			
		< DIODE >			
D101	8-719-404-50	DIODE	MA111-TX		
D103	8-719-420-83	DIODE	MA3075WA- (TX)		
D104	8-719-420-83	DIODE	MA3075WA- (TX)		
D105	8-719-420-83	DIODE	MA3075WA- (TX)		
D151	8-719-404-50	DIODE	MA111-TX		
D254	8-719-017-13	DIODE	02DZ7.5-TPH3		
D302	8-719-017-13	DIODE	02DZ7.5-TPH3		
D304	8-719-066-98	DIODE	RB051L-40TE25		
D305	8-719-066-98	DIODE	RB051L-40TE25		
D306	8-719-066-98	DIODE	RB051L-40TE25		
D307	8-719-941-87	DIODE	DAN202UT106		
D308	8-719-941-87	DIODE	DAN202UT106		
D309	8-719-938-77	DIODE	SB05-05CP-TB		
D310	8-719-066-98	DIODE	RB051L-40TE25		
D311	8-719-066-98	DIODE	RB051L-40TE25		
D620	8-719-017-13	DIODE	02DZ7.5-TPH3		
D621	8-719-017-13	DIODE	02DZ7.5-TPH3		
D622	8-719-017-13	DIODE	02DZ7.5-TPH3		
D623	8-719-017-13	DIODE	02DZ7.5-TPH3		
D624	8-719-017-13	DIODE	02DZ7.5-TPH3		
D625	8-719-017-13	DIODE	02DZ7.5-TPH3		
D626	8-719-017-13	DIODE	02DZ7.5-TPH3		
D901	8-719-017-13	DIODE	02DZ7.5-TPH3		
D904	8-719-941-21	DIODE	DAP202UT106		
D905	8-719-017-13	DIODE	02DZ7.5-TPH3		
D906	8-719-017-13	DIODE	02DZ7.5-TPH3		

Ref. No.	Part No.	Description		Remark
		< FUSE >		
⚠F301	1-533-626-21	FUSE (SMD)(1.25A/125V)		
⚠F302	1-533-626-21	FUSE (SMD)(1.25A/125V)		
		< SHORT >		
FB101	1-216-864-91	SHORT	0	
FB102	1-216-864-91	SHORT	0	
FB103	1-216-864-91	SHORT	0	
FB104	1-216-864-91	SHORT	0	
FB151	1-543-949-21	FERRITE	0uH	
FB152	1-216-864-91	SHORT	0	
FB301	1-543-962-21	FERRITE	0uH	
FB302	1-543-962-21	FERRITE	0uH	
FB303	1-543-962-21	FERRITE	0uH	
FB304	1-543-962-21	FERRITE	0uH	
FB305	1-216-864-91	SHORT	0	
FB306	1-216-864-91	SHORT	0	
FB307	1-216-295-91	SHORT	0	
FB309	1-216-295-91	SHORT	0	
FB901	1-216-295-91	SHORT	0	
FB902	1-216-295-91	SHORT	0	
FB903	1-216-295-91	SHORT	0	
		< FILTER >		
FL100	1-233-733-31	FILTER, LOW PASS		
FL101	1-233-733-31	FILTER, LOW PASS		
FL102	1-233-733-31	FILTER, LOW PASS		
FL251	1-234-109-21	LINE, LC DELAY (260NSEC)		
FL252	1-233-504-21	FILTER, LOW PASS		
FL253	1-233-504-21	FILTER, LOW PASS		
		< IC >		
IC101	8-759-539-46	IC	uPD6454GT-627-E2	
IC103	8-759-457-75	IC	MC141628FUEB	
IC201	8-752-074-62	IC	CXA1950Q-T4	
IC202	8-759-064-35	IC	MB88346BPFV-EF	
IC301	8-759-060-94	IC	MB3785APFV-G-BND-ER	
IC901	8-759-468-72	IC	AK6420AM-E2	
IC902	8-759-512-70	IC	S-81350HG-KD-T1	
IC903	8-759-565-26	IC	MB89082PFV-G-117-BND	
IC904	8-759-510-62	IC	S-80735AL-AZ-T1	
		< JACK >		
J101	1-778-040-11	JACK, SMALL TYPE (A/V IN)		
J301	1-568-727-31	JACK, DC (DC IN 9V)		
J601	1-569-810-31	JACK (SMALL TYPE)(🎧)		
		< COIL >		
L101	1-216-295-91	SHORT	0	
L104	1-406-452-21	COIL, OSC		
L155	1-414-078-21	INDUCTOR	10uH	
L301	1-424-653-21	INDUCTOR	0uH	
L302	1-424-653-21	INDUCTOR	0uH	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

Ref. No.	Part No.	Description	Remark
L303	1-424-675-21	INDUCTOR 0uH	
L304	1-414-398-21	INDUCTOR 10uH	
L305	1-412-033-22	INDUCTOR CHIP 220uH	
L306	1-414-078-21	INDUCTOR 10uH	
L307	1-414-432-21	INDUCTOR 22uH	
L308	1-412-028-22	INDUCTOR CHIP 4.7uH	
L309	1-216-296-91	SHORT 0	
L310	1-416-734-21	COIL, CHOKE 27uH	
L312	1-414-404-21	INDUCTOR 100uH	
L601	1-424-675-21	INDUCTOR 0uH	
L901	1-414-081-21	INDUCTOR 33uH	
		< IC LINK >	
PS901	1-576-123-21	LINK, IC	
		< TRANSISTOR >	
Q101	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q102	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q103	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q104	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q130	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q131	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q134	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q135	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q150	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q151	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q152	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q153	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q154	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q156	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q157	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q159	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q161	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q162	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q163	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q164	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q205	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q252	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q253	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q254	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q255	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q256	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q257	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q261	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q262	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q263	8-729-420-26	TRANSISTOR 2SB1218A-QRS-TX	
Q264	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q301	8-729-029-14	TRANSISTOR DTC144EUA-T106	
Q302	8-729-025-60	TRANSISTOR 2SJ318-01STL	
Q303	8-729-025-60	TRANSISTOR 2SJ318-01STL	
Q305	8-729-019-92	TRANSISTOR 2SJ238-TE12L	
Q306	8-729-019-92	TRANSISTOR 2SJ238-TE12L	
Q307	8-729-029-14	TRANSISTOR DTC144EUA-T106	

Ref. No.	Part No.	Description	Remark
Q309	8-729-804-52	TRANSISTOR 2SB1122-T-TD	
Q310	8-729-823-85	TRANSISTOR FP102-TL	
Q312	8-729-823-85	TRANSISTOR FP102-TL	
Q313	8-729-033-94	TRANSISTOR 2SB1204T-FA-TL	
Q314	8-729-029-07	TRANSISTOR DTC124TUA-T106	
Q316	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L	
Q317	8-729-024-24	TRANSISTOR 2SK2154-TL	
Q318	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q601	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q602	8-729-420-29	TRANSISTOR 2SD1819A-QRS-TX	
Q901	8-729-029-14	TRANSISTOR DTC144EUA-T106	
Q902	8-729-420-13	TRANSISTOR XN4213-TW	
Q903	8-729-402-85	TRANSISTOR XN4601-TW	
Q904	8-729-402-85	TRANSISTOR XN4601-TW	
		< RESISTOR >	
R101	1-218-285-91	RES, CHIP 75 5% 1/16W	
R102	1-216-864-91	SHORT 0	
R103	1-216-833-91	RES, CHIP 10K 5% 1/16W	
R104	1-216-831-91	RES, CHIP 6.8K 5% 1/16W	
R105	1-216-841-91	RES, CHIP 47K 5% 1/16W	
R106	1-216-854-91	RES, CHIP 560K 5% 1/16W	
R108	1-216-821-91	RES, CHIP 1K 5% 1/16W	
R109	1-216-837-91	RES, CHIP 22K 5% 1/16W	
R110	1-216-839-91	RES, CHIP 33K 5% 1/16W	
R111	1-216-842-91	RES, CHIP 56K 5% 1/16W	
R112	1-216-839-91	RES, CHIP 33K 5% 1/16W	
R113	1-216-824-91	RES, CHIP 1.8K 5% 1/16W	
R114	1-216-830-91	RES, CHIP 5.6K 5% 1/16W	
R115	1-216-844-91	RES, CHIP 82K 5% 1/16W	
R116	1-216-852-91	RES, CHIP 390K 5% 1/16W	
R117	1-216-821-91	RES, CHIP 1K 5% 1/16W	
R118	1-216-811-91	RES, CHIP 150 5% 1/16W	
R119	1-216-821-91	RES, CHIP 1K 5% 1/16W	
R120	1-216-833-91	RES, CHIP 10K 5% 1/16W	
R121	1-216-833-91	RES, CHIP 10K 5% 1/16W	
R123	1-216-833-91	RES, CHIP 10K 5% 1/16W	
R124	1-216-833-91	RES, CHIP 10K 5% 1/16W	
R125	1-216-833-91	RES, CHIP 10K 5% 1/16W	
R126	1-216-833-91	RES, CHIP 10K 5% 1/16W	
R127	1-216-841-91	RES, CHIP 47K 5% 1/16W	
R128	1-216-836-91	RES, CHIP 18K 5% 1/16W	
R130	1-216-833-91	RES, CHIP 10K 5% 1/16W	
R131	1-216-831-91	RES, CHIP 6.8K 5% 1/16W	
R132	1-216-834-91	RES, CHIP 12K 5% 1/16W	
R133	1-216-857-91	RES, CHIP 1M 5% 1/16W	
R135	1-216-813-91	RES, CHIP 220 5% 1/16W	
R137	1-216-822-91	RES, CHIP 1.2K 5% 1/16W	
R138	1-216-833-91	RES, CHIP 10K 5% 1/16W	
R139	1-216-817-91	RES, CHIP 470 5% 1/16W	
R140	1-216-864-91	SHORT 0	
R141	1-216-821-91	RES, CHIP 1K 5% 1/16W	
R146	1-216-864-91	SHORT 0	

Ref. No.	Part No.	Description			Remark
R148	1-216-809-91	RES, CHIP	100	5%	1/16W
R150	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R151	1-216-821-91	RES, CHIP	1K	5%	1/16W
R152	1-216-822-91	RES, CHIP	1.2K	5%	1/16W
R153	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R154	1-216-826-91	RES, CHIP	2.7K	5%	1/16W
R155	1-216-821-91	RES, CHIP	1K	5%	1/16W
R157	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R158	1-216-805-91	RES, CHIP	47	5%	1/16W
R159	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R160	1-216-864-91	SHORT	0		
R162	1-216-864-91	SHORT	0		
R164	1-216-833-91	RES, CHIP	10K	5%	1/16W
R166	1-216-833-91	RES, CHIP	10K	5%	1/16W
R167	1-216-833-91	RES, CHIP	10K	5%	1/16W
R169	1-216-833-91	RES, CHIP	10K	5%	1/16W
R170	1-216-295-91	SHORT	0		
R171	1-216-841-91	RES, CHIP	47K	5%	1/16W
R172	1-216-809-91	RES, CHIP	100	5%	1/16W
R173	1-216-805-91	RES, CHIP	47	5%	1/16W
R176	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R177	1-216-821-91	RES, CHIP	1K	5%	1/16W
R178	1-216-822-91	RES, CHIP	1.2K	5%	1/16W
R180	1-216-821-91	RES, CHIP	1K	5%	1/16W
R181	1-216-816-91	RES, CHIP	390	5%	1/16W
R182	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R187	1-216-839-91	RES, CHIP	33K	5%	1/16W
R188	1-216-839-91	RES, CHIP	33K	5%	1/16W
R189	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R190	1-216-821-91	RES, CHIP	1K	5%	1/16W
R191	1-216-822-91	RES, CHIP	1.2K	5%	1/16W
R192	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R193	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R194	1-216-824-91	RES, CHIP	1.8K	5%	1/16W
R196	1-216-821-91	RES, CHIP	1K	5%	1/16W
R198	1-216-864-91	SHORT	0		
R199	1-216-864-91	SHORT	0		
R200	1-216-821-91	RES, CHIP	1K	5%	1/16W
R201	1-216-853-91	RES, CHIP	470K	5%	1/16W
R202	1-216-821-91	RES, CHIP	1K	5%	1/16W
R203	1-216-833-91	RES, CHIP	10K	5%	1/16W
R204	1-216-833-91	RES, CHIP	10K	5%	1/16W
R205	1-216-840-91	RES, CHIP	39K	5%	1/16W
R206	1-218-881-91	RES, CHIP	27K	0.50%	1/16W
R207	1-216-842-91	RES, CHIP	56K	5%	1/16W
R208	1-216-864-91	SHORT	0		
R209	1-216-821-91	RES, CHIP	1K	5%	1/16W
R210	1-216-848-91	RES, CHIP	180K	5%	1/16W
R211	1-216-828-91	RES, CHIP	3.9K	5%	1/16W
R212	1-216-864-91	SHORT	0		
R213	1-216-833-91	RES, CHIP	10K	5%	1/16W
R214	1-216-845-91	RES, CHIP	100K	5%	1/16W
R215	1-216-824-91	RES, CHIP	1.8K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R216	1-216-828-91	RES, CHIP	3.9K	5%	1/16W
R217	1-216-839-91	RES, CHIP	33K	5%	1/16W
R218	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R219	1-216-864-91	SHORT	0		
R220	1-216-864-91	SHORT	0		
R221	1-216-864-91	SHORT	0		
R244	1-216-821-91	RES, CHIP	1K	5%	1/16W
R247	1-216-864-91	SHORT	0		
R248	1-216-864-91	SHORT	0		
R249	1-216-864-91	SHORT	0		
R250	1-216-809-91	RES, CHIP	100	5%	1/16W
R251	1-216-864-91	SHORT	0		
R252	1-216-809-91	RES, CHIP	100	5%	1/16W
R253	1-216-864-91	SHORT	0		
R254	1-216-295-91	SHORT	0		
R255	1-216-864-91	SHORT	0		
R256	1-216-839-91	RES, CHIP	33K	5%	1/16W
R257	1-216-840-91	RES, CHIP	39K	5%	1/16W
R258	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R259	1-216-818-91	RES, CHIP	560	5%	1/16W
R260	1-216-830-91	RES, CHIP	5.6K	5%	1/16W
R261	1-216-841-91	RES, CHIP	47K	5%	1/16W
R262	1-216-837-91	RES, CHIP	22K	5%	1/16W
R264	1-216-821-91	RES, CHIP	1K	5%	1/16W
R265	1-216-817-91	RES, CHIP	470	5%	1/16W
R267	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R268	1-216-839-91	RES, CHIP	33K	5%	1/16W
R269	1-216-840-91	RES, CHIP	39K	5%	1/16W
R270	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R271	1-216-818-91	RES, CHIP	560	5%	1/16W
R272	1-216-830-91	RES, CHIP	5.6K	5%	1/16W
R276	1-216-819-91	RES, CHIP	680	5%	1/16W
R277	1-216-817-91	RES, CHIP	470	5%	1/16W
R279	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R283	1-216-821-91	RES, CHIP	1K	5%	1/16W
R284	1-216-821-91	RES, CHIP	1K	5%	1/16W
R285	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R286	1-216-825-91	RES, CHIP	2.2K	5%	1/16W
R287	1-216-821-91	RES, CHIP	1K	5%	1/16W
R289	1-216-827-91	RES, CHIP	3.3K	5%	1/16W
R290	1-216-809-91	RES, CHIP	100	5%	1/16W
R293	1-216-809-91	RES, CHIP	100	5%	1/16W
R294	1-216-823-91	RES, CHIP	1.5K	5%	1/16W
R295	1-216-864-91	SHORT	0		
R296	1-216-833-91	RES, CHIP	10K	5%	1/16W
R297	1-216-833-91	RES, CHIP	10K	5%	1/16W
R298	1-216-833-91	RES, CHIP	10K	5%	1/16W
R299	1-216-864-91	SHORT	0		
R301	1-218-887-91	RES, CHIP	47K	0.50%	1/16W
R302	1-218-887-91	RES, CHIP	47K	0.50%	1/16W
R303	1-216-833-91	RES, CHIP	10K	5%	1/16W
R304	1-218-867-91	RES, CHIP	6.8K	0.50%	1/16W
R305	1-218-859-91	RES, CHIP	3.3K	0.50%	1/16W
R306	1-216-206-91	RES, CHIP	2.2K	5%	1/8W

YM-11

Ref. No.	Part No.	Description			Remark
R307	1-216-841-91	RES, CHIP	47K	5%	1/16W
R308	1-216-841-91	RES, CHIP	47K	5%	1/16W
R309	1-216-841-91	RES, CHIP	47K	5%	1/16W
R311	1-216-841-91	RES, CHIP	47K	5%	1/16W
R312	1-216-864-91	SHORT	0		
R313	1-218-867-91	RES, CHIP	6.8K	0.50%	1/16W
R314	1-218-887-91	RES, CHIP	47K	0.50%	1/16W
R315	1-218-847-91	RES, CHIP	1K	0.50%	1/16W
R316	1-218-887-91	RES, CHIP	47K	0.50%	1/16W
R318	1-218-867-91	RES, CHIP	6.8K	0.50%	1/16W
R319	1-216-864-91	SHORT	0		
R321	1-216-864-91	SHORT	0		
R322	1-218-879-91	RES, CHIP	22K	0.50%	1/16W
R323	1-216-841-91	RES, CHIP	47K	5%	1/16W
R324	1-218-861-91	RES, CHIP	3.9K	0.50%	1/16W
R325	1-218-877-91	RES, CHIP	18K	0.50%	1/16W
R326	1-218-873-91	RES, CHIP	12K	0.50%	1/16W
R327	1-218-865-91	RES, CHIP	5.6K	0.50%	1/16W
R328	1-218-876-91	RES, CHIP	16K	0.50%	1/16W
R329	1-216-847-91	RES, CHIP	150K	5%	1/16W
R330	1-216-845-91	RES, CHIP	100K	5%	1/16W
R331	1-218-873-91	RES, CHIP	12K	0.50%	1/16W
R333	1-216-832-91	RES, CHIP	8.2K	5%	1/16W
R334	1-218-885-91	RES, CHIP	39K	0.50%	1/16W
R338	1-218-881-91	RES, CHIP	27K	0.50%	1/16W
R339	1-218-867-91	RES, CHIP	6.8K	0.50%	1/16W
R340	1-218-873-91	RES, CHIP	12K	0.50%	1/16W
R341	1-218-877-91	RES, CHIP	18K	0.50%	1/16W
R342	1-216-864-91	SHORT	0		
R343	1-216-819-91	RES, CHIP	680	5%	1/16W
R344	1-218-891-91	RES, CHIP	68K	0.50%	1/16W
R345	1-218-879-91	RES, CHIP	22K	0.50%	1/16W
R346	1-218-873-91	RES, CHIP	12K	0.50%	1/16W
R347	1-218-881-91	RES, CHIP	27K	0.50%	1/16W
R348	1-218-883-91	RES, CHIP	33K	0.50%	1/16W
R349	1-216-027-91	RES, CHIP	120	5%	1/10W
R350	1-216-041-91	RES, CHIP	470	5%	1/10W
R351	1-216-027-91	RES, CHIP	120	5%	1/10W
R352	1-216-033-91	RES, CHIP	220	5%	1/10W
R353	1-218-871-91	RES, CHIP	10K	0.50%	1/16W
R355	1-216-838-91	RES, CHIP	27K	5%	1/16W
R359	1-216-845-91	RES, CHIP	100K	5%	1/16W
R360	1-216-797-91	RES, CHIP	10	5%	1/16W
R362	1-218-901-91	RES, CHIP	180K	0.50%	1/16W
R363	1-218-850-91	RES, CHIP	1.3K	0.50%	1/16W
R364	1-218-873-91	RES, CHIP	12K	0.50%	1/16W
R365	1-218-865-91	RES, CHIP	5.6K	0.50%	1/16W
R366	1-218-895-91	RES, CHIP	100K	0.50%	1/16W
R367	1-216-140-91	RES, CHIP	3.9	5%	1/8W
R368	1-216-140-91	RES, CHIP	3.9	5%	1/8W
R372	1-216-864-91	SHORT	0		
R374	1-218-891-91	RES, CHIP	68K	0.50%	1/16W
R375	1-216-841-91	RES, CHIP	47K	5%	1/16W
R376	1-216-841-91	RES, CHIP	47K	5%	1/16W
R601	1-216-836-91	RES, CHIP	18K	5%	1/16W
R602	1-216-836-91	RES, CHIP	18K	5%	1/16W
R603	1-216-849-91	RES, CHIP	220K	5%	1/16W
R604	1-216-849-91	RES, CHIP	220K	5%	1/16W
R605	1-216-841-91	RES, CHIP	47K	5%	1/16W
R606	1-216-843-91	RES, CHIP	68K	5%	1/16W
R607	1-216-841-91	RES, CHIP	47K	5%	1/16W
R608	1-216-843-91	RES, CHIP	68K	5%	1/16W
R609	1-216-829-91	RES, CHIP	4.7K	5%	1/16W
R610	1-216-829-91	RES, CHIP	4.7K	5%	1/16W
R620	1-216-864-91	SHORT	0		
R621	1-216-864-91	SHORT	0		
R622	1-216-864-91	SHORT	0		
R623	1-216-864-91	SHORT	0		
R624	1-216-864-91	SHORT	0		
R625	1-216-864-91	SHORT	0		
R626	1-216-864-91	SHORT	0		
R627	1-216-864-91	SHORT	0		
R628	1-216-864-91	SHORT	0		
R629	1-216-864-91	SHORT	0		
R901	1-218-285-91	RES, CHIP	75	5%	1/16W
R902	1-216-845-91	RES, CHIP	100K	5%	1/16W
R903	1-216-841-91	RES, CHIP	47K	5%	1/16W
R904	1-216-845-91	RES, CHIP	100K	5%	1/16W
R905	1-216-841-91	RES, CHIP	47K	5%	1/16W
R906	1-216-841-91	RES, CHIP	47K	5%	1/16W
R907	1-216-841-91	RES, CHIP	47K	5%	1/16W
R908	1-216-845-91	RES, CHIP	100K	5%	1/16W
R909	1-216-841-91	RES, CHIP	47K	5%	1/16W
R910	1-216-821-91	RES, CHIP	1K	5%	1/16W
R911	1-216-821-91	RES, CHIP	1K	5%	1/16W
R912	1-216-821-91	RES, CHIP	1K	5%	1/16W
R914	1-216-821-91	RES, CHIP	1K	5%	1/16W
R915	1-216-821-91	RES, CHIP	1K	5%	1/16W
R916	1-216-821-91	RES, CHIP	1K	5%	1/16W
R917	1-216-821-91	RES, CHIP	1K	5%	1/16W
R918	1-216-821-91	RES, CHIP	1K	5%	1/16W
R919	1-216-821-91	RES, CHIP	1K	5%	1/16W
R920	1-216-821-91	RES, CHIP	1K	5%	1/16W
R921	1-216-821-91	RES, CHIP	1K	5%	1/16W
R922	1-216-833-91	RES, CHIP	10K	5%	1/16W
R923	1-216-821-91	RES, CHIP	1K	5%	1/16W
R924	1-216-851-91	RES, CHIP	330K	5%	1/16W
R925	1-216-853-91	RES, CHIP	470K	5%	1/16W
R926	1-216-849-91	RES, CHIP	220K	5%	1/16W
R927	1-216-833-91	RES, CHIP	10K	5%	1/16W
R928	1-216-817-91	RES, CHIP	470	5%	1/16W
R929	1-216-864-91	SHORT	0		
R930	1-216-864-91	SHORT	0		
R931	1-216-833-91	RES, CHIP	10K	5%	1/16W
R932	1-216-864-91	SHORT	0		
R933	1-216-821-91	RES, CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R934	1-216-821-91	RES, CHIP	1K	5%	1/16W
R935	1-216-821-91	RES, CHIP	1K	5%	1/16W
R936	1-216-821-91	RES, CHIP	1K	5%	1/16W
R937	1-216-821-91	RES, CHIP	1K	5%	1/16W
R938	1-216-821-91	RES, CHIP	1K	5%	1/16W
R939	1-216-821-91	RES, CHIP	1K	5%	1/16W
R941	1-216-833-91	RES, CHIP	10K	5%	1/16W
R943	1-216-864-91	SHORT	0		
R945	1-216-821-91	RES, CHIP	1K	5%	1/16W
R946	1-216-845-91	RES, CHIP	100K	5%	1/16W
R947	1-216-836-91	RES, CHIP	18K	5%	1/16W
R948	1-216-821-91	RES, CHIP	1K	5%	1/16W
R949	1-216-845-91	RES, CHIP	100K	5%	1/16W
R950	1-216-831-91	RES, CHIP	6.8K	5%	1/16W
R951	1-216-841-91	RES, CHIP	47K	5%	1/16W
R952	1-216-821-91	RES, CHIP	1K	5%	1/16W
R953	1-216-821-91	RES, CHIP	1K	5%	1/16W
R954	1-216-833-91	RES, CHIP	10K	5%	1/16W
R955	1-216-821-91	RES, CHIP	1K	5%	1/16W
R956	1-216-841-91	RES, CHIP	47K	5%	1/16W
R957	1-216-821-91	RES, CHIP	1K	5%	1/16W
R958	1-216-821-91	RES, CHIP	1K	5%	1/16W
R959	1-216-821-91	RES, CHIP	1K	5%	1/16W
R960	1-216-833-91	RES, CHIP	10K	5%	1/16W
R961	1-216-833-91	RES, CHIP	10K	5%	1/16W
R963	1-216-821-91	RES, CHIP	1K	5%	1/16W
R964	1-216-821-91	RES, CHIP	1K	5%	1/16W
R965	1-216-821-91	RES, CHIP	1K	5%	1/16W
R966	1-216-845-91	RES, CHIP	100K	5%	1/16W
R971	1-216-836-91	RES, CHIP	18K	5%	1/16W
R972	1-216-831-91	RES, CHIP	6.8K	5%	1/16W
R973	1-216-815-91	RES, CHIP	330	5%	1/16W
R974	1-216-827-91	RES, CHIP	3.3K	5%	1/16W
R975	1-216-815-91	RES, CHIP	330	5%	1/16W
R976	1-216-815-91	RES, CHIP	330	5%	1/16W
R977	1-216-827-91	RES, CHIP	3.3K	5%	1/16W
R978	1-216-815-91	RES, CHIP	330	5%	1/16W

< VARIABLE RESISTOR >

RV101	1-223-278-21	RES, ADJ, CERMET 100K

< SWITCH >

S901	1-571-787-11	SWITCH, TACTILE (PASSWORD RESET)

< TRANSFORMER >

T301	1-429-719-21	TRANSFORMER, DC-DC CONVERTER

< VIBRATOR >

X101	1-579-738-41	VIBRATOR, CRYSTAL (14.318182MHz)
X201	1-579-466-21	VIBRATOR, CRYSTAL (3.579545MHz)
X901	1-767-300-21	VIBRATOR, CRYSTAL (32.768kHz)
XTL901	1-579-369-21	VIBRATOR (10MHz)

****

Ref. No.	Part No.	Description	Remark

MISCELLANEOUS
****

⚠10	1-475-821-11	LIGHT UNIT, BACK	
16	1-670-401-11	FP-29 FLEXIBLE BOARD	
56	1-670-402-11	FP-30 FLEXIBLE BOARD	
106	1-777-761-11	WIRE (FLAT TYPE) (24 CORE)	
107	1-694-076-21	TERMINAL BOARD, BATTERY	
111	1-783-687-11	CORD, CONNECTION (MR)	
114	1-958-979-11	HARNESS SY	
HP401	8-953-118-92	HEADPHONE MDR-E838PT/2 SET (L)	
HP402	8-953-118-92	HEADPHONE MDR-E838PT/2 SET (R)	
RV401	1-225-661-11	RES, VAR, CARBON 50K (VOL)	

****

ACCESSORIES & PACKING MATERIALS
****

⚠	1-475-456-11	ADAPTOR, AC (AC-PLM2) (US, Canadian)	
⚠	1-475-456-21	ADAPTOR, AC (AC-PLM2) (Singapore)	
⚠	1-590-866-21	CORD, POWER (Singapore)	
⚠	1-775-549-21	CORD, POWER (US, Canadian)	
	1-777-690-11	CORD, CONNECTION	
	1-783-829-11	CABLE, AV MONITOR	
	3-862-932-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH)	(US, Canadian)
	3-862-932-21	MANUAL, INSTRUCTION (ENGLISH, CHINESE)	(Singapore)
	3-988-801-01	CASE, SOFT	
	X-3948-746-1	HOOD (L) ASSY	
	X-3948-747-1	HOOD (R) ASSY	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

9-928-101-11

Sony Corporation
Information Technology Company

98G0525-1
Printed in Japan © 1998. 7
Published by Technical Response Center